THE EFFECTS OF EARLY DEVELOPMENTAL STRESS AND EXERCISE INTERVENTION ON NEURODEGENERATION IN A RAT MODEL OF PARKINSON'S DISEASE.

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ABSTRACT

Early developmental stress has been shown to produce numerous deleterious effects, such as the later development of affective disorders, and this has been related to chronic enhanced hypothalamic-pituitary-adrenal axis activity. Animal studies have shown that maternally separated rats exhibit increased anxiety- and depression- like behaviour in adulthood, although other evidence shows hyperactivity and impulsivity consequent to maternal separation. Given that stress has these behavioural effects, it is of interest to determine whether early developmental stress might enhance the toxicity of a later unrelated neural insult. The 6-hydroxydopamine (6-OHDA) model of Parkinson's disease involves the selective unilateral lesion of nigrostriatal dopamine neurons. In this group of studies it was hypothesized that maternal separation might enhance the toxic effects of 6-OHDA. In the first study, the possible effects of voluntary exercise were also investigated, with the hypothesis that such an intervention might reverse the posited negative effects of maternal separation. Male Sprague Dawley rats underwent maternal separation for three hours per day from P2 to P14. From P28 to P49 half of the rats were housed in cages with attached running wheels and allowed to exercise voluntarily. On P35 either saline or 6-OHDA was stereotactically infused into the left striatum. On P49 and P63 rats underwent behavioural testing for limb asymmetry and for anxiety-like behaviour. Significant limb asymmetry was observed in 6-OHDA lesioned rats, but this was not affected by maternal separation or exercise. Lesioned rats also exhibited fewer stepping and rearing movements than non-lesioned rats. At P49, exercised rats exhibited fewer stepping and rearing movements and moved less in the open field and elevated plus maze. Most of these effects disappeared at P63. Maternally separated rats moved with greater mean velocity and over a greater distance in the open field than non-separated rats at P49, and in the elevated plus maze at P63. These results suggest that maternal separation does not enhance the toxic effect of 6-OHDA in adolescent male rats,

although it appears to have effects on other behaviours. Exercise in this protocol did not have a beneficial effect on the lesion, but the behavioural results may be indicative of enhanced risk-assessment behaviour and cautiousness. However, the variety of maternal separation protocols in the literature make it difficult to compare results directly. Furthermore, the isolation experienced during adolescence as an adjunct to the exercise protocol was undoubtedly a confounding factor. These results are in contrast to previous studies showing that maternal separation enhanced the toxic effect of a similar dose of 6-OHDA in adolescent female rats and suggest that male and female rats may not respond similarly to these interventions. Based on these results, it was decided in the second part of the study to examine the possible differential effects of sex on the interaction of maternal separation and a 6-OHDA lesion. Male and female Sprague Dawley rats were maternally separated as described above. Rats were lesioned between 10 and 12 weeks of age, and then transcardially perfused seven days after lesion. The striatum and substantia nigra were immunohistochemically stained for tyrosine hydroxylase. In the striatum, TH staining was quantified by means of densitometry; total TH+ cell counts were determined in the substantia nigra. A significant effect of the lesion was observed, with significantly less TH staining in the left striatum compared to the right, and fewer TH+ cell bodies in left SN than in right. No effect of maternal separation or of sex was observed on TH immunoreactivity, either in the striatum or the SN. However, the apoptotic nature of 6-OHDA-induced cell death was demonstrated by the presence of phospho-c-jun immunoreactivity. This confirms the behavioural findings that maternal separation did not enhance the toxic effect of 6-OHDA, and extends it to include rats lesioned in early adulthood.

ABBREVIATIONS

6-OHDA: 6-Hydroxydopamine

ACTH: Adrenocorticotrophic hormone

ADHD: Attention-deficit hyperactivity disorder

BDNF: Brain-derived neurotrophic factor

BSA: Bovine serum albumin

CAT: Catalase

CORT: Corticosterone

CRH: Corticotrophin-releasing hormone

DA: Dopamine

DAB: Diaminobenzidine

DAT: Dopamine transporter

EPM: Elevated plus maze

FGF-2: Basic fibroblast growth factor

GFAP: Glial fibrillary associated protein

GPx: Glutathione peroxidase

GR: Glucocorticoid receptor

HPA axis: Hypothalamic pituitary adrenal axis

HPLC: High performance liquid chromatography

IGF-1: Insulin-like growth factor 1

LTD: Long-term depression

LTP: Long-term potentiation

MFB: Medial forebrain bundle

MR: Mineralocorticoid receptor

MS: Maternal separation

mPFC: Medial prefrontal cortex

NGF: Nerve growth factor

NHS: Normal horse serum

PBS: Phosphate-buffered saline

PD: Parkinson’s disease

PVN: Paraventricular nucleus

PTSD: Post-traumatic stress disorder

PFC: Prefrontal cortex

ROS: Reactive oxygen species

SD: Sprague Dawley

SN: Substantia nigra

SNpc: Substantia nigra pars compacta

SNS: Sympathetic nervous system

SOD: Superoxide dismutase

TH: Tyrosine hydroxylase

CHAPTER 1

INTRODUCTION

1. CHRONIC STRESS INDUCES DELETERIOUS EFFECTS IN THE SHORT- AND LONG- TERM

1.1 STRESS AND THE GENERAL ADAPTATION SYNDROME

In 1936 Hans Selye described what he termed the "general adaptation syndrome": the overall response of an organism to a relatively noxious external stimulus and its attempts to adapt to corresponding new conditions (Selye, 1936). According to Selye, this syndrome consists of three phases: the initial alarm phase, in which the organism is confronted with the stressor and makes certain emergency physiological responses; the resistance phase, in which the organism adapts to the ongoing stressor and bodily functions return almost to normal; and the exhaustion phase, in which the unremitting stress becomes overwhelming to the organism and it succumbs, with deleterious and potentially fatal physiological effects.

1.1.1 Physiological Stress Response Systems

Following the perception of a threat, the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal (HPA) axis are activated: the SNS is responsible for the immediate response, with the release of epinephrine and norepinephrine, while the HPA axis provides the slower onset response to the stressor (Conrad, 2008). The hypothalamus coordinates physiological and behavioural activity to maintain the homeostatic environment essential for the well-being and survival of the organism (Kandel, Schwartz & Jessell, 2000). Located in the diencephalon, it consists of a number of nuclei and receives sensory inputs regarding both the internal and external environment. When the stressor impinges on either of

these environments, the median eminence of the hypothalamus is stimulated to release corticotrophin-releasing hormone (CRH), which is synthesised in the paraventricular nucleus (PVN) and carried via the hypophyseal portal system to the adenohypophysis, or anterior pituitary. There it stimulates the release of adrenocorticotrophic hormone (ACTH) into the general circulation. ACTH is carried to the adrenal cortex, where it stimulates the release of the glucocorticoid cortisol (Ganong, 2001).

Glucocorticoid and mineralocorticoid receptors (GR and MR, respectively), to which the released cortisol can bind, are expressed at multiple sites in the body and brain, enabling a variety of adaptive responses of the organism to the stressor (Lupien *et al*, 2009). In the body, cortisol effects are mediated chiefly by GR. In the brain, both GR and MR are responsible for cortisol binding. MRs have a far greater affinity for cortisol than GRs, and are responsible for the tonic mediation of negative feedback on the HPA axis, such as during normal diurnal glucocorticoid variations (Diorio, Viau & Meaney, 1993). The elevated glucocorticoid levels that occur during times of stress result in binding to GRs in the hippocampus (Owen, Andrews and Matthews, 2005), the PVN and the pituitary (Kapoor, Petropoulos & Matthews, 2008), and the prefrontal cortex (PFC; Diorio, Viau & Meaney, 1993) which then exert a negative feedback effect on the HPA axis and inhibit its further activity.

The stress response of the HPA axis is essential for continued survival of the organism. Glucocorticoids exert their effects by binding to their receptors, and the complexes thus formed act as transcription factors for the formation of enzymes which produce a variety of effects. These include increased gluconeogenesis, which provides an enhanced glucose supply to the brain, heart and muscles, inhibition of the immune system and inflammatory response, and maintenance of vascular reactivity, which may be important in the ability of the body to respond to circulating catecholamines during stress (Ganong, 2001).

As Selye described, however, ongoing exposure to a noxious stimulus eventually produces deleterious effects in the organism. Biological systems which can adapt during a relatively short-term stress become overloaded when that stress continues for a protracted period. A vast body of literature, covering both animal and human studies, supports the hypothesis that chronic stress causes pathological alterations in the subjected organism.

1.1.2 Behavioural and affective alterations in response to chronic stress

1.1.2.1 Animal Studies

A number of rat studies have examined the behavioural effects of exposure to chronic stress. Four weeks of repeated restraint stress combined with tail shock induced a significant escape deficit in adult male Sprague Dawley (SD) rats (Raone *et al*, 2007). This effect can be compared to the psychomotor retardation observed in human depression, and was accordingly reversed by concomitant administration of the antidepressant imipramine. Papp *et al* (2002) noted that male Wistar rats that were exposed to a chronic mild stress regime exhibited a significantly reduced consumption of a sucrose solution. This behavioural characteristic has been compared to the anhedonia exhibited in human depression, and was reversed by treatment with citalopram (Papp *et al*, 2002). A similar effect of stress on sucrose consumption was observed in SDs by Banasr *et al* (2007), who reported its reversal with fluoxetine administration, and by Grønli *et al* (2005), who additionally noted impairments in sexual behaviour and altered open field activity in stressed rats. Significant alterations in EPM behaviour, both immediately following the stress period and several weeks later, were observed following chronic social stress in adolescence (McCormick, Smith & Matthews, 2008) and post-weaning chronic unpredictable stress (Maslova, Bulygina & Markel, 2002), suggesting that neural effects of such stress may linger even when it is no longer present.

In a transgenic mouse model of chronic CRH hypersecretion, significantly reduced activity was observed in the open field as well as a shorter duration in the open arms of the EPM as compared to controls (Stenzel-Poore *et al*, 1994), behaviours which have been used as models of depression and anxiety symptoms in humans. Long-term hypersecretion of CRH mimics the on-going HPA activation which occurs during chronic stress; that this produces depression- and anxiety-like behaviour provides additional support for the concept of chronic stress-induced behavioural deficits.

1.1.2.2 Human Studies

Studies involving human subjects confirm the results of animal research: experience of stressful life events has been shown to be significantly associated with the development of psychological disorder, including post traumatic stress disorder (PTSD), depression, and anxiety disorders, and many victims of such events exhibit symptoms of more than one such disorder (Ehring, Ehlers & Glucksman, 2006; Ferrara *et al*, 2008; Honkalampi *et al*, 2006; Kendler, Karkowski & Prescott, 1999; Surtees *et al*, 1986). A number of studies show enhanced psychological responsiveness to stressful events (i.e. enhanced likelihood of development of the above psychological conditions) in subjects with prior disorders, such as substance abuse (Cottler, Nishith & Compton, 2001) and psychosis (Thompson *et al*, 2007); cognitive functioning under conditions of acute psychosocial stress was shown to be significantly impaired in social phobics as compared to healthy individuals (Graver & White, 2007). Symptoms of PTSD, depression and/ or anxiety have been observed in a substantial proportion of survivors of natural disasters (Ehring, Razik & Emmelkamp, 2009) and war-related traumatic events (Kashdan, Morina & Priebe, 2009).

Victims of physical stress also show an increased likelihood of developing emotional disorders. Significantly higher levels of PTSD, depression, anxiety and obsessive-compulsive

disorders have been observed in breast cancer survivors than in healthy controls (Amir & Ramati, 2002). Chronic pain has been associated with the development of depression and anxiety disorders (Tsang *et al*, 2008); significant levels of PTSD, depression and anxiety have been reported in individuals who experienced chronic pain associated with work-related injuries (Asmundson *et al*, 1998). A large number of burns victims develop PTSD and depression, although subjective interpretations of the stressor, such as concerns about scarring, appear to correlate most strongly with the severity of the psychological symptoms (Bryant, 1996).

Not all victims of traumatic events develop psychological illnesses: in many cases, there are factors which appear to predispose individuals to the development of affective disorders following the experience of stressful events. Traumatic experience prior to the relevant stressor significantly increases the likelihood of psychological damage (Ehring, Razik & Emmelkamp, 2009), and overall poorer quality of life appears to correlate with symptom severity (Amir & Ramati, 2002; Cottler, Nishith & Compton, 2001; Honkalampi *et al*, 2004; Kashdan, Morina & Priebe, 2009). These results suggest that the individual can be sensitised to the effects of stress by prior or concurrent negative experience, thus making him or her more susceptible to the development of emotional disorders.

1.1.3 Metabolic and Neuronal Alterations in Response to Chronic Stress

As might be expected in the light of the psychological and emotional effects, exposure to chronic stress induces a variety of metabolic and neuronal alterations.

1.1.3.1 Animal Studies

Chronic stress in animals appears to induce long-term alterations in HPA axis activity. In comparison to non-stressed controls, SDs exposed to repeated restraint stress exhibited elevated basal plasma corticosterone (CORT) levels as well as increased CORT release in response to administered CRH (Raone *et al*, 2007). Increased basal CORT and ACTH levels were observed in rats subjected to paradoxical sleep deprivation (Suchecki, Tiba & Tufik, 2002). This study also demonstrated that CORT levels immediately after exposure to an additional acute stressor were more greatly increased in previously stressed than stress-naive rats, suggesting that prior chronic stress may facilitate HPA response to a subsequent threat. Banasr *et al* (2007) also noted increased plasma CORT levels following a chronic stress paradigm, and showed additionally that these were normalised by treatment with fluoxetine.

As earlier described, GR-mediated negative feedback moderates HPA axis activity following exposure to a stressor. Evidence suggests that this feedback may be attenuated by long-term stress exposure. Rats exposed to chronic stress exhibit reduced dexamethasone suppression of CORT release and concomitant reduction in GR expression in the PFC and hippocampus (Mizoguchi *et al*, 2003; Raone *et al*, 2007). Downregulation of GRs is a logical result of the chronically elevated levels of CORT occurring during chronic stress. By contrast, rats subjected to chronic paradoxical sleep deprivation showed more rapidly declining CORT levels than controls following exposure to a subsequent novel environment stress (Suchecki, Tiba & Tufik, 2002), an effect which argues against attenuated negative feedback on the HPA axis. However, sleep deprived rats in this experiment fell asleep within minutes of placement in the novel environment, a behaviour that was not observed in controls and that might well be expected to alter CORT levels.

Chronic stress also appears to produce neural effects not directly related to HPA axis activity. In rats subjected to permanent bilateral ligation of the common carotid arteries, chronic mild stress exacerbated pyramidal cell loss in the hippocampal CA1 region, in addition to

downregulating glial fibrillary associated protein (GFAP) expression in CA1, CA3 and hilus (Ritchie, De Butte & Pappas, 2004), a result which suggests that ongoing stress may promote reduced or dysfunctional astrocyte formation. Repeated exposure to a variety of mild stressors significantly enhanced long term depression (LTD) induction and reduced neurogenesis in the CA1 (Holderbach *et al*, 2007). Proliferation of endothelial cells and oligodendrocytes was shown to be reduced in the cingulate, motor and prelimbic cortices and dentate gyrus of rats subjected to chronic unpredictable stress (Banasr *et al*, 2007).

1.1.3.2 Human Studies

Given the role played by the hippocampus in glucocorticoid negative feedback on the HPA axis, it is not surprising that higher levels of chronic stress have been shown to be associated with reduced hippocampal volumes (Gianaros *et al*, 2007). The same study showed an association of chronic stress and reduced right orbitofrontal volumes: this is an area responsible in mediating a number of cognitive and emotional functions, and alterations correlate well with the pathological effects of stress that have been described above.

Studies of HPA axis activity following stress confirm the results observed in animal studies. In premenopausal women suffering from PTSD, CRH and ACTH stimulation elevated cortisol levels significantly more than in healthy controls, although baseline cortisol levels were not different between the groups (Rasmusson *et al*, 2001), a result which supports the hypothesis that chronically stressed individuals exhibit enhanced sensitivity to additional stress.

A large body of evidence suggests that individuals with emotional and affective disorders exhibit altered HPA axis activity. Raised levels of CRH have been observed in the locus coeruleus and PFC of suicide victims who were clinically depressed (Merali *et al*, 2006), and genetic variations in CRH receptors have been shown to be associated with altered response

to antidepressant treatment (Licinio *et al*, 2004; Liu *et al*, 2007). Individuals with depression often exhibit dexamethasone non-suppression of cortisol release (Aihara *et al*, 2007; Calfa *et al*, 2003; Duval *et al*, 2006), suggesting that negative feedback on the HPA axis is significantly reduced in depression. This conclusion is further supported by research showing that depressed patients display greater increases in plasma ACTH, cortisol, norepinephrine and epinephrine in response to acute mental stress than healthy controls (Weinstein *et al*, 2010).

Depression and anxiety are most certainly not always the result of prior severe or chronic stress, but the dysfunction of the stress system that is frequently observed in affective disorders is strong evidence for a pathological relationship between the two. It can most certainly be concluded that excessive activity of the HPA axis, as occurs with ongoing stress, has potentially severe deleterious effects on the brain.

1.2 STRESS IN THE EARLY DEVELOPMENTAL PERIODS OF LIFE

Possibly the most potent effects of stressful experiences are observed when those experiences occur in the early developmental phases of life.

1.2.1 Behavioural and Affective Consequences of Early Developmental Stress: Human Studies

Children exposed to large-scale disasters exhibit psychological problems such as anxiety and depression, as well as conduct disorders, years after the event (Boer *et al*, 2009). Experiences

of trauma such as physical or sexual abuse during childhood are strongly associated with development of affective and anxiety disorders in adulthood (Comijs *et al*, 2007; De Bellis *et al*, 1999; Grassi-Oliviera & Stein, 2008; Saleptsi *et al*, 2004). Emotional abuse or neglect have also been shown to increase the risk of adulthood psychiatric disorder: Krause, Mendelson and Lynch (2003) demonstrated that children subjected to chronic emotional invalidation display increased symptoms of anxiety and depression as adults, and furthermore that such individuals employ coping strategies such as avoidance and inhibition, which enhance emotional distress. Victims of childhood abuse often exhibit increased levels of dissociation (Draijer & Langeland, 1999); this is probably also a coping mechanism, but has been shown to be associated with psychiatric disorder in adulthood (Mulder *et al*, 1998).

Poor stability of the early environment, even without deliberate intent to cause harm, has been shown to produce negative effects in later life. During World War 2 many children were evacuated from their homes for safety reasons, often being separated from their parents for long periods. In adulthood, these children showed an increased risk for affective disorders (Pesonen *et al*, 2007), and an increased risk for depressive symptoms even when not clinically ill (Pesonen *et al*, 2010). Children raised in institutions have been shown to be at greater risk for the development of anxiety disorders (Tottenham *et al*, 2010). Moreover, these children exhibited impaired performance in an emotional go-nogo task, implying that their cognitive function is affected by the emotional context of the task at hand. The children studied had been adopted while still relatively young, into high socio-economic level families, several years prior to testing. This result suggests that alterations induced by early life stress may be refractory to later positive interventions.

1.2.2 Metabolic and Neuronal Consequences of Early Developmental Stress: Human Studies

In concordance with what has been observed as a result of stress in adulthood, early life trauma produces long-lasting metabolic and neuronal effects. Individuals who were exposed to adverse events in childhood such as sexual abuse, domestic violence or the loss of a close family member exhibited significantly reduced volumes of anterior cingulate cortex and caudate nuclei than non-exposed individuals (Cohen *et al*, 2006). Interestingly, the adults included in this study did not reach *clinically* significant levels of depressive or anxiety symptoms, although a strong correlation was observed between levels of depression and anxiety and early life stress. This suggests that stress may induce neuroanatomical changes in areas implicated in adult psychopathology which, while not causing clinical effects, may sensitise the brain to later insult. Such a cumulative effect was observed by Buss *et al* (2007), who noted that low birth weight individuals who experienced post-natal poor maternal care exhibit smaller hippocampal volumes than individuals who experienced only one or the other stressor. Moreover, institution-raised children have been demonstrated to have larger amygdala volumes than family-raised children (Tottenham *et al*, 2010), an alteration which would tend to enhance emotional responsiveness to stress and thus predispose such individuals to the development of later stress-induced affective disorders.

Early life stress appears to induce changes in neural activity. Adults who experienced abuse and other trauma as children have been shown to exhibit reduced steady-state activity of the cerebellar vermis (Anderson *et al*, 2002), as well as reduced occipital-parietal-temporal responses to emotional stimuli (Matz *et al*, 2010). By contrast, increased fear-induced startle was observed in a study of patients with child abuse-induced PTSD (Jovanovic *et al*, 2009), and medial prefrontal cortex (mPFC) activity in response to conscious and non-conscious fear stimuli was enhanced in subjects who had experienced high levels of early life stress

(Williams *et al*, 2009). As observed above, such alterations would tend to increase the sensitivity of the individual to the negative effects of later adverse experiences.

Alterations in HPA axis activity have been observed as a result of developmental trauma. In a group of adults diagnosed with PTSD, peak change in cortisol following CRH stimulation was shown to be negatively correlated with age of first traumatic experience (Rasmusson *et al*, 2001). Although in this study baseline cortisol levels were not different from controls, other research shows that children with PTSD excrete significantly more 24 hour urinary free cortisol than non-PTSD children (De Bellis *et al*, 1999). A study of adults separated from their parents during childhood showed differences from controls in salivary cortisol at all time-points during a stress test (Pesonen *et al*, 2010). It is possible that different forms of stress elicit different changes in the HPA axis, and additionally that the alterations observed in childhood may not be the same as those noted in adults.

There is overwhelming evidence, therefore, that stress during early development induces long-lasting changes in the anatomy and function of the brain. As described earlier, such alterations may well be the result of the chronic enhanced HPA drive that occurs as a result of intense and sustained stress, and the toxic effects of the glucocorticoids released during this response. The results strongly suggest, moreover, that these alterations may produce indirect effects on the individual concerned by sensitising the brain to the effects of later stressors.

Much research is warranted in the area of early developmental stress and the long-term effects thereof. Given the obvious ethical concerns, however, human studies are subject to limitations. Studies of early life stress in animals, therefore, are invaluable, allowing a number of avenues of investigation which are not viable in humans.

1.3 MATERNAL SEPARATION IS A MODEL OF EARLY DEVELOPMENTAL STRESS

"One of the most potent stressors for pups is separation from the dam" (Lupien *et al*, 2009). Maternal separation (MS), or separation of young from the mother in the early postnatal period, is a widely-studied model for early developmental stress, enabling a large variety of investigations of the effects of such stress.

1.3.1 The Behavioural Consequences of Maternal Separation

MS induces alterations in a variety of behavioural measures. It has been shown to reduce time spent in the open arms of the EPM (Daniels *et al*, 2004; Kalinichev *et al*, 2002; van Heerden *et al*, 2009; Wigger & Neumann, 1999), a behavioural measure indicative of increased anxiety. Several studies evidence reduced locomotor activity in a novel environment as a result of MS (Daniels *et al*, 2004; Lippmann *et al*, 2007). MS increased immobility time in the forced swim test following chronic restraint stress in adulthood (Marais *et al*, 2008). In the stress-hyperresponsive Fischer rat strain, MS was observed to reduce consumption of condensed milk (Rüedi-Bettschen *et al*, 2006); this alteration can be compared to the anhedonia observed in human depression. These studies suggest that early life stress in the form of MS increases behaviours which may be considered to correspond to symptoms of anxiety and affective disorders in humans, a conclusion which parallels human research findings.

These effects, however, are by no means universal. Increased locomotor activity in a novel open field has been observed in rats subjected to MS (Brake *et al*, 2004; Colorado *et al*, 2006; Sanders & Anticevic; 2007; Slotten *et al*, 2006; Spivey *et al*, 2009). In contrast to the results

described above, Parfitt *et al* observed that MS increased time spent in the open quadrants of the elevated zero maze (2007), and Toth *et al* (2008) noted that rats subjected to MS exhibited increased duration in the inner zone of a novel open field. These effects appear to indicate reduced anxiety as a result of MS. Social interaction with an unknown cage partner was increased by MS in a study by Giachino *et al* (2007), although Toth *et al* (2008) observed a decrease in such interaction as a result of MS. Effects of MS on later measures of emotionality can thus be seen to be controversial in terms of the precise direction of such effects. That alterations are induced by early developmental interventions is, however, indisputable.

MS induces alterations in learning and memory in addition to its effects on emotionality. Rats subjected to MS display impaired recall in a tone fear conditioning task (Guijarro *et al*, 2007), and deficits in avoidance during an active avoidance task (Lehmann *et al*, 1999; Rüedi-Bettschen *et al*, 2006). In an object location task, female rats subjected to MS exhibited poorer performances than control rats (Mourlon *et al*, 2010). Furthermore, Gruss *et al* (2007) demonstrated that a single 24 hour MS from P9-P10 prevents reinforcement of long-term potentiation (LTP) in the hippocampus, suggesting one possible neural alteration underlying the deleterious effects of MS on learning and memory.

1.3.2 The Metabolic and Neural Consequences of Maternal Separation

In line with previously evidence citing the effects of chronic stress on the HPA axis, MS induces significant alterations on neuroendocrine profiles, at both acute and long-term levels. Rats subjected to MS exhibit exaggerated CORT response to cold stress (Avishai-Eliner *et al*, 1995) immediately following separation, and to air-puff startle (Arborelius & Eklund, 2007; Lippmann *et al*, 2007), acoustic startle (Kalinichev *et al*, 2002) and restraint stress

(McCormick *et al*, 2002) in adulthood. MS induced an exaggerated ACTH response following air-puff startle (Lippmann *et al*, 2007) and the relatively mild stress of the EPM (Wigger & Neumann, 1999). Following a variety of stressors, prolonged elevation of CORT (Arborelius & Eklund, 2007; Avishai-Eliner *et al*, 1995; Desbonnet *et al*, 2008; Lippmann *et al*, 2007; van Heerden *et al*, 2009) and ACTH (Lippmann *et al*, 2007) have been noted as a consequence of MS. Conversely, other studies have shown an attenuated CORT (Parfitt *et al*, 2007; Rüedi-Bettschen *et al*, 2006) and ACTH (Daniels *et al*, 2004; Faure *et al*, 2007; Marais *et al*, 2008) response to stress in previously maternally separated rats. Other investigators noted no difference between MS and control rats in stress-induced CORT (Guijarro *et al*, 2007; Marais *et al*, 2008; Roceri *et al*, 2004; Slotten *et al*, 2006; Wigger & Neumann, 1999) and ACTH (Kalinichev *et al*, 2002; Slotten *et al*, 2006). Interestingly, in many studies control and separated rats demonstrated no difference in baseline levels of CORT and ACTH, but an exaggerated or attenuated HPA response to stress (Arborelius & Eklund, 2007; Desbonnet *et al*, 2008; Lippmann *et al*, 2007; Marais *et al*, 2008; Rüedi-Bettschen *et al*, 2006). These results suggest that an effect of MS may be to alter the response of the HPA axis to further stress: animals which experience early life trauma, while maintaining a relatively normal neuroendocrine profile under tonic conditions, may respond more poorly to stress at a later period. As previously described, this may be a result of reduced negative feedback on the HPA axis. Observations of reduced GR expression in the anterodorsal thalamic nuclei and mammillary nuclei (Rivarola & Suárez, 2009) and hippocampus (Sutanto *et al*, 1996) support this explanation.

Alterations in CRH expression and PVN activity as a consequence of MS have also been noted. Desbonnet *et al* (2008) observed that swim stress increased CRH immunoreactivity and c-fos expression in the PVN of previously separated rats. A similar result was observed after saline injection in juveniles that had been maternally separated (van Oers, de Kloet &

Levine, 1998). Sanders & Anticevic (2007) noted increased c-fos expression in the PVN of previously separated rats following restraint stress. Calcium-binding proteins calretinin and calbindin have been shown to be reduced in the PVN of rats previously subjected to MS (Giachino *et al*, 2007); these proteins are relevant in the firing and synaptic plasticity of neurons, and alterations in expression may affect regulatory signalling and function of CRH neurons. These observations provide further evidence that MS produces long-term effects on the responsivity of the HPA axis to stress.

The effects of MS are not limited to the HPA axis, however. Given the evidence from a number of studies that MS produces anxiety- and depression-like effects, alterations in central monoaminergic systems might be expected. Increased turnover of serotonin has been observed in the cingulate cortex and nucleus accumbens following MS (Arborelius & Eklund, 2007); Daniels *et al* (2004) observed a similar effect of MS in the PFC and hypothalamus following restraint stress. Social stress in adulthood in rats previously exposed to MS was shown to increase expression of allelic variants of the serotonin transporter gene *scl6a4* which have been linked to anxiety and depression in humans (Gardner *et al*, 2009), suggesting that MS confers a vulnerability to stress-induced alterations in serotonergic activity. Alterations in dopamine (DA) neurotransmission have also been noted as a consequence of MS. Arborelius & Eklund showed that MS increased DA levels in the amygdala, an area involved in the expression of fear and anxiety (2007); such a result correlates well with the increased anxiety-like behaviour frequently observed following MS. In the nucleus accumbens an exaggerated stress-induced DA response was observed in MS rats, as well as reduced levels of DA transporter expression and increased receptor binding (Brake *et al*, 2004). Conversely, McCormick *et al* (2002) noted that restraint stress slightly reduced DA release in the nucleus accumbens of previously separated rats. The nucleus accumbens is involved in reinforcement and memory consolidation (Chatterjee *et al*, 2007),

and alterations here are congruent with the deleterious effects of MS on performance in several learning tasks, as well as with the anhedonia sometimes observed following MS.

Numerous studies have documented effects of MS on neurotrophic factors. Brain-derived neurotrophic factor (BDNF) has been shown to be reduced in the cortex, amygdala, nucleus accumbens and hypothalamus in adult rats previously subjected to MS (Chatterjee *et al*, 2007). Other studies show similar reductions in BDNF in the hippocampus (Lippmann *et al*, 2007; Roceri *et al*, 2002; Zhang *et al*, 2002) and the striatum (Lippmann *et al*, 2007; Roceri *et al*, 2004). BDNF is important in the maintenance of synaptic plasticity and neuronal function (Chatterjee *et al*, 2007); alterations in its expression as a consequence of MS correlate well with the effects of MS on various brain systems, and may be a contributing factor to the heightened stress reactivity observed as a result of MS behaviourally, metabolically and neurologically, as reduced BDNF expression would impair the ability of the brain to withstand the effects of stress.

MS has also been shown to alter structural and cellular integrity in the brain. Reduced hippocampal volume (Llorente *et al*, 2009) and dorsoventral thickness of the PFC (Spivey *et al*, 2009) have been observed following MS. Zhang *et al* (2002) noted increased neuronal and oligodendrocytic apoptosis in the cortex, hippocampus and cerebellum as a result of MS; similarly, Llorente *et al* showed that MS increased neuronal degeneration in the hippocampus and astrocyte activation in the hippocampus and cerebellum (2009). Increased numbers of neurons, conversely, as well as glial cells, were observed by Chatterjee *et al* (2007) after MS, but NCAM and synaptophysin levels were shown to be simultaneously reduced, suggesting that MS may disrupt the balance between structure and functionality.

That MS has dramatic and often severe effects is thus indisputable, even if variations exist in the exact nature of those results. Structural alterations in the brain, such as reduced volume of

areas important in learning and executive function, have been observed as a consequence of MS, and these are supported by multiple studies demonstrating disturbances in neuronal and glial function and survival. Other research suggests that these effects may in part be a result of changes in levels of proteins such as neurotrophic factors, which play vital roles in maintaining neuronal viability and synaptic plasticity. Unsurprisingly in the light of such evidence, an array of behavioural effects have been observed following MS, from depression- and anxiety-like behaviours to learning disturbances and ADHD-like symptomatology. This closely parallels the human situation described in an earlier section, where developmental stress has been shown to be a strong predisposing factor to the development of various psychopathologies. Multiple studies have provided evidence that MS induces long-lasting effects in the HPA axis, with the bulk of research suggesting that responsivity of the axis to future stress is altered, specifically with regard to reduced negative feedback at the level of the glucocorticoid receptors. Downregulation of these receptors might well occur following sustained elevation of CORT levels during MS. Furthermore, the toxicity of glucocorticoids at these levels could be expected to induce deleterious changes in the brain such as those mentioned above. Having occurred during the early postnatal period of high neural plasticity and development, these changes might continue to affect the individual throughout its lifetime.

Probably the most potent effect of MS is that it sensitizes the individual to later stress. Animals subjected to MS display an exaggerated response to stress during adolescence and adulthood, at behavioural, neuroendocrine, neurochemical and anatomical levels. This is certainly mediated in part by the altered HPA axis, and is to be expected given the wide-spread effects of MS described above. The individual may be able to compensate for these effects during tonic conditions, but in the presence of a stressor the brain is unable to cope adequately.

Most studies of the effects of later stressors on previously maternally separated animals, however, have made use of psychological and/or physical stressors such as restraint stress or forced swimming. These stressors might be expected to activate the HPA axis directly, and most have been shown so to do. What is not well-understood, however, is whether MS sensitises individuals to the effects of unrelated neural insult at some later stage. Given the effects of MS on markers of neuronal plasticity and neurotrophic factors (Burton *et al*, 2007; Chatterjee *et al*, 2007; Roceri *et al*, 2002; Zhang *et al*, 2002), as well as on neuronal survival (Llorente *et al*, 2009; Zhang *et al*, 2002) it might be expected that animals which had undergone MS would exhibit an exaggerated response to neurotoxicity in later life.

2. THE 6-HYDROXYDOPAMINE MODEL OF PARKINSON'S DISEASE

One experimentally-induced neural insult which has been extensively characterised is the 6-hydroxydopamine (6-OHDA) rodent model of Parkinson's disease.

2.1 PARKINSON'S DISEASE AND THE NIGROSTRIATAL SYSTEM

Parkinson's disease (PD) is a progressive disorder characterised clinically by bradykinesia, akinesia, muscle rigidity and resting tremor (Abraham *et al*, 2005). These symptoms are the result of selective degeneration of the dopaminergic neurons of the substantia nigra pars compacta, and the consequent depletion of striatal DA (Gerlach *et al*, 1996).

The basal ganglia regulate motor areas in the cortex and brain stem, and by means of feedback circuits ensure that movements controlled by these regions are smooth (Kandel, Schwartz & Jessell, 2000). The striatum is the main recipient in the basal ganglia of projections from the cortex, brainstem and thalamus; neurons from the striatum project to the substantia nigra pars reticulata (SNpr) and the globus pallidus interna (GPi), from which the major output projections from the basal ganglia arise and project to the thalamus (Kandel, Schwartz & Jessell, 2000). Output neurons from the SNpr and GPi are tonically active and inhibit target nuclei in the thalamus, resulting in inhibition of activity in the cortex. This inhibitory activity by the projections from the basal ganglia is modulated by two pathways running from the striatum to the SNpr and GPi: the direct pathway, which inhibits these output nuclei, and the indirect pathway, which is excitatory. (Gerlach *et al*, 1996; Kandel, Schwartz & Jessell, 2000).

Dopaminergic projections from the substantia nigra pars compacta (SNpc) serve to regulate the activity of the direct and indirect pathways. Neurons projecting in the direct pathway have D1 receptors; when DA is released from the SNpc at these synapses, these neurons are activated. Neurons projecting from the striatum in the indirect pathway, however, have D2 receptors. When DA released from the SNpc binds to these receptors, the neurons are inhibited. Activity of the DA-ergic projections from the SNpc thus leads to the reduction of inhibition of the thalamocortical neurons and thereby facilitates movement (Kandel, Schwartz & Jessell, 2000).

In PD, degeneration of SNpc neurons results in loss of DAergic control of the striatum and consequent increased inhibition of the direct and reduced inhibition of the indirect pathways. The resulting hyperactivity of the output nuclei and increased inhibition of the thalamocortical neurons causes the characteristic motor symptoms of PD (Gerlach *et al*, 1996).

Various animal models of PD have been developed in which damage to the nigrostriatal dopaminergic neurons is experimentally induced. The 6-OHDA model has been well-characterised behaviourally and neurochemically.

2.2 CELLULAR MECHANISMS OF 6-OHDA TOXICITY

6-OHDA is a toxin which shows high specificity for uptake into catecholaminergic neurons (Martí *et al*, 2002; Przedborski *et al*, 1995). When applied directly to the nigrostriatal system by means of stereotaxic infusion, it is taken up into the neuron by the DA transporter (DAT; Redman *et al*, 2006) where it exerts its effects via several mechanisms. Its extremely rapid initial effect is the generation of high levels of reactive oxygen species (ROS; Beretta *et al*,

2005) such as superoxide, peroxide and hydroxyl radicals (Glinka & Youdim, 1995). Increased markers of lipid peroxidation (Mazzio, Reams & Soliman, 2004; Sánchez-Igesias *et al*, 2007), protein carbonyl content (Sánchez-Igesias *et al*, 2007; Smith & Cass, 2007) and 4-hydroxynonenal (Smith & Cass, 2007) have been observed within hours of 6-OHDA application. Elevated levels of ROS provide an environment of enhanced oxidative stress, which induces damage directly to the neurons (Smith & Cass, 2007) by damage to membrane and intracellular proteins (De Iuliis *et al*, 2005). Interestingly, Seth *et al* noted that 6-OHDA reduced the activity of antioxidant enzymes (2002); this would further enhance the toxic effects of the generated ROS by inhibiting the ability of the system to remove them.

Mitochondrial damage has been shown to occur following 6-OHDA application. Membrane lipid peroxidation leads to damage of the electron transport system (Glinka & Youdim, 1995); these authors showed that the activities of mitochondrial respiratory chain complexes I and IV were inhibited by 6-OHDA. Other research indicated that 6-OHDA might, on the other hand, slightly enhance the activity of complex I, but reduce the activity of complexes II, III and IV (Mazzio, Reams & Soliman, 2004; Seth *et al*, 2002), suggesting that 6-OHDA may exert its effects by maintaining the components of the electron transport chain in a reduced state and thus preventing normal oxidation and reduction. Glinka & Youdim further suggest that the prevention of mitochondrial function and consequent reduced ATP production would hinder the protective response of the cell and allow for further damage (1995).

These initial oxidative effects of 6-OHDA application induce degeneration and ultimately death of the dopaminergic neurons, and the majority of evidence suggests that this occurs via programmed cell death, or apoptosis. 6-OHDA has been shown to induce caspase-dependent apoptosis (Holtz & O'Malley, 2003; Redman *et al*, 2006). The expression of a variety of pro-apoptotic proteins is upregulated following 6-OHDA application. The early response genes c-jun and c-fos, which form part of the transcription factor and regulator of cell death AP-1, are

rapidly induced (Seth *et al*, 2002), and the JNK/SAPK pathway is activated, as evidenced by high levels of phosphorylated c-jun (Holtz & O'Malley, 2003). The bcl-2 family of proteins, which are important regulators of cell death and survival, were shown to be altered following 6-OHDA infusion in expression and distribution in the SNpc (Kramer & Mytilineou, 2004) and striatum (Mladenović *et al*, 2004). The majority of histological evidence confirms that 6-OHDA induces apoptosis: morphological profiles of apoptosis were observed in slice preparations after 6-OHDA application (Beretta *et al*, 2005) and following *in vivo* 6-OHDA infusion (Martí *et al*, 2002). Jeon and colleagues, conversely, saw no evidence for specifically apoptotic cell death following intranigral 6-OHDA infusion (Jeon, Jackson-Lewis & Burke, 1995). TUNEL staining was observed in the striatum and SNpc following 6-OHDA infusion (Mladenović *et al*, 2004), although Kramer & Mytilineou did not show the same result, despite providing evidence of altered apoptotic protein expression (2004). These apparently contradictory findings could well be explained by the wide-spread nature of the effects of 6-OHDA. Holtz & O'Malley note that 6-OHDA induces the expression of proteins involved in several different death cascades (2003), suggesting that the resultant neurodegeneration may occur by means of a variety of mechanisms. Kramer & Mytilineou similarly observed that the cell death in response to oxidative stress may have both apoptotic and necrotic features (2004). Furthermore, experimental differences such as 6-OHDA concentration, site of lesion and oxidative environment might well play a role in the determination of which mechanisms are chiefly responsible for the induction of damage and neurodegeneration.

Apoptotic cell death is dependent on the expression and upregulation of a number of protein mediators (Holtz & O'Malley, 2003); the transcription of many of these genes is under the control of the AP-1 family of transcription factors (Herdegen *et al*, 1998). A component of AP-1 is c-Jun, whose expression is upregulated in neural cells following a variety of insults

(Herdegen *et al*, 1998), and whose ability to activate gene transcription is strongly potentiated by its phosphorylation on serine-73 by N-terminal Jun kinases (Karin & Gallagher, 2005). Expression of phospho-c-Jun has been correlated with intensity of injury, as well as with neuronal apoptosis (Herdegen, 1998). Administration of 6-OHDA has been shown to induce phosphorylation of c-Jun (Holtz & O'Malley, 2003) specifically in dopaminergic neurons of the SN that are undergoing apoptosis (Vaudano, Rosenblad & Björklund, 2001). The authors of the latter study suggest that a more complete terminal lesion may induce more intense c-Jun phosphorylation (Vaudano, Rosenblad & Björklund, 2001).

6-OHDA thus appears to exert its deleterious effects by means of a series of related events, with an initial rapid increase in the production of ROS and markers of oxidative stress, followed by an induction of apoptotic pathways, which leads to the degeneration and death of the affected neurons.

2.3. QUANTIFICATION OF THE 6-OHDA LESION

The standard 6-OHDA PD model is induced by unilateral stereotaxic infusion of the toxin into the nigrostriatal pathway. As described above, this results in the selective destruction of the DA neurons with a consequent PD-like motor symptomatology. The unilateral denervation enables quantification of the lesion both behaviourally and neurochemically.

2.3.1 Behavioural Quantification

Various tests have been developed for the analysis of the functional effects of 6-OHDA lesion of the nigrostriatal system. As a result of the unilateral lesion, symptoms are induced

asymmetrically, and behavioural tests make use of this to quantify the extent of the asymmetry.

Consequent to the death of the DA terminals, DA receptors in the striatum ipsilateral to the lesion are upregulated (Araki *et al*, 2000). Subsequent injection with a DA agonist, usually apomorphine, causes rotation contralateral to the lesion, with the number of rotations associated with the degree of asymmetry and the extent of the lesion (Barnéoud *et al*, 1995; Blandini *et al*, 2007). A version of this test involves post-lesion injection with amphetamine: this causes rotation ipsilateral to the lesion owing to greater release of DA on the non-lesioned side (Kelsey *et al*, 2004; Ogura *et al*, 2005).

The vibrissae-elicited forelimb placing test evaluates the ability of the rat to respond to vibrissae stimulation with movement of the appropriate forelimb; the forelimb contralateral to the lesion shows a significantly reduced ability to respond (Anstrom *et al*, 2007), and the degree of deficit can be scored, with a comparison to the non-lesioned side and to sham-lesioned controls (Woodlee *et al*, 2008). Similarly, the step test involves a measurement of limb akinesia (Olsson *et al*, 1995), but in response to a shift in the centre of gravity of the rat. In this test, the hind paws of the rat are restrained by the experimenter, as well as one of the forepaws, allowing the weight of the rat to rest on the forepaw being tested (Pienaar *et al*, 2007). The rat is then moved by the experimenter over a designated distance and number of steps taken by the forepaw is counted (Kelsey *et al*, 2004; Pienaar *et al*, 2007); alternatively, the rat is slowly moved forward until a step is taken (Woodlee *et al*, 2008). The akinesia exhibited by the rat in the lesioned limb results in inability to initiate an adjusting step in response to weight shift, and this is seen as a significantly longer step length (Woodlee *et al*, 2008) or fewer steps over a set distance (Pienaar *et al*, 2007) by this limb than the intact limb. The stepping test has been shown to be sensitive to the degree of DA depletion, with greater deficits shown with more extensive DA loss (Kelsey *et al*, 2004); Kirik, Rosenblad &

Björklund showed that stepping deficits correlated well with overall loss of terminals in the corresponding striatum (1998). In the light of research which showed that apomorphine rotation exhibits a threshold effect, with no rotation occurring unless a relatively severe lesion has developed (Henderson *et al*, 2003), the step and vibrissae tests may be more valuable as tools for the analysis of 6-OHDA lesion.

The cylinder test evaluates asymmetry in forelimb use in the vertical and lateral exploration of a cylindrical enclosure (Schallert *et al*, 2000). Voluntary use of the forelimbs as regards placement of forepaws on and forepaw stepping along the walls is scored, and a percentage value assigned which indicates the severity of preference for the use of one limb. 6-OHDA lesions induce significant reduction in the voluntary movement of the limb contralateral to the lesion (Tillerson *et al*, 2001), and the extent of this reduction has been shown to be correlated to the loss of DA neurons in the SNpc (Iancu *et al*, 2005). It has been suggested that the step test, involving as it does direct interaction between animal and experimenter, may include an element of subjectivity (Olsson *et al*, 1995); the cylinder test avoids this, and may thus be a valuable measure in addition to the step and vibrissae tests.

2.3.2 Neurochemical Quantification

Various neurochemical measures have been used to measure the extent of the lesion induced by 6-OHDA. High performance liquid chromatography (HPLC) has shown altered levels of DA and its metabolites in the lesioned striatum (Henderson *et al*, 2003; Smith & Cass, 2007), with good correlation between DA levels and use of the contralateral limb in a test of skilled paw use (Barnéoud *et al*, 1995) and the step test (Kelsey *et al*, 2004). Alterations in noradrenalin levels have also been observed by HPLC analysis (Olsson *et al*, 1995), but Henderson and colleagues showed no effect of 6-OHDA on other neurotransmitters (2003),

confirming the selectivity of the toxin for catecholaminergic neurons. Determination of functional activity in the striatum by microdialysis shows that DA release is significantly reduced on the lesioned side compared to the intact striatum (Ogura *et al*, 2005).

A commonly used method for determination of the extent of the 6-OHDA lesion is tyrosine hydroxylase (TH) immunohistochemistry. TH is the rate-limiting enzyme for catecholamine synthesis (Przedborski *et al*, 1995); it is expressed in the cytoplasm of catecholaminergic neurons (Ganong, 2001), and provides a useful marker for DA neurons in the striatum and the SNpc. In the striatum, immunohistochemical staining identifies terminals of DA neurons; the extent of denervation as a consequence of 6-OHDA infusion can be observed as a loss of TH staining density (Blandini *et al*, 2007; Kirik, Rosenblad & Björklund, 1998). In the SNpc, TH is located in the cell bodies, which are discretely detectable following immunohistochemistry and may be counted (Iancu *et al*, 2005; Ogura *et al*, 2005). The loss of DA neurons can be quantified by expressing TH staining on the lesioned side as a percentage of staining on the non-lesioned side (Blandini *et al*, 2007; Grealish *et al*, 2008; Kirik, Rosenblad & Björklund, 1998).

2.4 6-OHDA IS INFUSED INTO THE NIGROSTRIATAL SYSTEM AT VARIOUS LEVELS

Destruction of the DA neurons may be induced by injection of 6-OHDA into the nigrostriatal pathway at various levels: into the cell bodies in the SNpc, the axons in the medial forebrain bundle (MFB) or the terminals in the striatum (Grealish *et al*, 2008). Injection into the cell bodies or the MFB induces a rapid, almost total destruction of the neurons (Grealish *et al*, 2008; Ogura *et al*, 2005; Przedborski *et al*, 1995), with cell death occurring as rapidly as twelve hours following surgery (Jeon, Jackson-Lewis & Burke, 1995). Injection into the

striatum, however, induces a more gradual and less complete lesion (Blandini *et al*, 2007). In the latter situation, the toxin is taken up into the terminals by DAT, where it initiates its effects (Smith & Cass, 2007); it is then transported retrogradely to the cell bodies in the SNpc (Fang *et al*, 2006). Damage to the terminals occurs within the first post-operative day (Blandini *et al*, 2007; Smith & Cass, 2007) and continues for up to three weeks (Blandini *et al*, 2007). Loss of the cell bodies in the SNpc, on the other hand, is less rapid, initiating several days after the first terminal loss is observed (Kramer & Mytilineou, 2004; Smith & Cass, 2007). Research suggests that this retrograde cell loss occurs in two phases: the first is relatively rapid, occurring within the first post-surgical month, and the second is slower and more protracted, taking place over a period of months (Kirik, Rosenblad & Björklund, 1998; Mladenović *et al*, 2004).

The partial lesion induced by intrastriatal infusion is valuable for research purposes in several ways. The slower time-course of damage provides a window which allows for the evaluation of potential therapies and interventions (Blandini *et al*, 2007). Towards this end, the portion that remains of the nigrostriatal tract in this model may serve as a substrate for recovery or regeneration of function (Kirik, Rosenblad & Björklund, 1998). Conversely, these factors may be used to evaluate the effects of negative influences.

2.5 CHRONIC STRESS INDUCES VULNERABILITY TO THE EFFECTS OF 6-OHDA

It has been speculated that pathogenic events occurring during development may induce a vulnerability to the later development of PD (see Barlow *et al*, 2007, for review). Similarly, the effects of 6-OHDA have been shown to be modulated by stress, with chronic restraint stress impairing behaviour on a skilled reaching task following 6-OHDA lesion over and

above the deficits observed in non-stressed rats (Smith *et al*, 2008). The same authors observed reduced neuronal survival in the stressed rats subjected to 6-OHDA when compared to non-stressed rats given the toxin. MS was shown to increase 6-OHDA-induced behavioural impairments in adult rats in the step test and cylinder test (Mabandla & Russell, 2010) and by adolescent female rats in the step and vibrissae tests, as well as enhancing the loss of TH+ neurons (Pienaar *et al*, 2008). This is congruent with research which shows that chronic glucocorticoid exposure enhances ROS production (McIntosh & Sapolsky, 1996) and reduces antioxidant capacity (McIntosh, Hong & Sapolsky, 1998), as well as impairing striatal DA function (Izzo, Sanna & Koob, 2005). More specifically, MS has been shown to increase lipid peroxidation in the striatum and reduce the activities of antioxidant enzymes (Uysal *et al*, 2005) as well as reduce the global antioxidant capacity of the rat (Marais *et al*, 2008). These effects might well be expected to enhance the toxic oxidative effects of 6-OHDA. Moreover, as described previously, MS alters expression of neurotrophic factors in a manner that would reduce endogenous neuroprotection against toxic damage by 6-OHDA.

In the light of this, the unilateral intrastriatal 6-OHDA model of PD provides a valuable and well-characterised tool for the investigation of the effects of MS on a later unrelated neural insult.

Given that the effects of 6-OHDA may be enhanced by prior negative experience in the form of MS, the question arises as to whether there are potential interventions which might provide some form of neuroprotection against 6-OHDA-induced damage. One such potential therapeutic manipulation is physical exercise.

3. PHYSICAL EXERCISE AS A NEUROPROTECTIVE INTERVENTION

There is increasing support from scientific research for the concept that physical exercise may have a variety of beneficial effects on the brain.

3.1 COGNITIVE AND AFFECTIVE CONSEQUENCES OF EXERCISE

Exercise has been shown to promote learning and memory formation in both animals and humans, and is associated with improved cognition (reviewed by Hillman, Erickson & Kramer, 2008). Chronic access to running wheels improved performance in the Morris Water maze (Ding *et al*, 2006a), as well as abolishing uncontrollable stress-induced helplessness and the associated learning deficits (Greenwood *et al*, 2005). Similarly, four weeks of swimming exercise improved performance on a passive avoidance task; interestingly, this effect was lost following eight weeks of detraining, suggesting that certain effects of exercise are only maintained for the duration of the active period (Radak *et al*, 2006). Furthermore, exercise has been shown to improve the symptoms of depression and anxiety in humans (Craft, 2005; De Moor *et al*, 2008, reviewed by Salmon, 2001), and this effect has been noted in animal studies as well; exercise abolished stress-induced hypoactivity in the open field (Radak *et al*, 2001), as well as reducing anxiety-like behaviours across a number of behavioural tests (Salam *et al*, 2009).

3.2 EXERCISE IS NEUROPROTECTIVE AGAINST 6-OHDA-INDUCED DAMAGE

Of particular interest is the potential for exercise to promote the protection and repair of the brain. In a study of three different brain insults, both induced and inherited, treadmill exercise

was shown to promote behavioural recovery as well as ameliorate neuronal loss in laboratory rodents (Carro *et al*, 2001). In the context of the hemi-Parkinsonian rat, it is of interest to examine whether behavioural manipulations such as exercise would limit the neurotoxic effects of 6-OHDA infusion, at either the behavioural or the neuroanatomical level.

3.2.1 Behavioural Effects

Numbers of studies have examined the effects of physical activity on 6-OHDA lesioned rats. Environmental enrichment, involving a significant motor component, was shown to promote the recovery of performance on skilled reaching tasks and ladder-walking following 6-OHDA infusion, as well as to reduce apomorphine-induced rotation (Jadavji, Kolb & Metz, 2006). A less robust, although still positive, effect of environmental enrichment and rotarod training was observed on amphetamine-induced rotation following 6-OHDA infusion (Steiner *et al*, 2006). Some research has focused on motor therapy targeting functions specifically damaged in PD: Tillerson *et al* observed that forced use of the impaired forelimb by immobilisation of the unimpaired limb in the first week following 6-OHDA lesion prevented significant forelimb asymmetry and akinesia, as well as reducing apomorphine-induced rotation (2001). Anstrom *et al* observed a similar reduction in asymmetry and akinesia as a consequence of focused sensorimotor training in the form of repeated vibrissae-elicited forelimb placing (2007). Repeated treadmill training has been shown to reduce apomorphine-induced rotation and forelimb akinesia in 6-OHDA-lesioned rats (Poulton & Muir, 2005), and to reduce forelimb asymmetry in the cylinder test (Tillerson *et al*, 2003); such an intervention is perhaps more valuable from a clinical perspective, as exercise programmes may be more applicable to the human context than other of the manipulations mentioned above. Wheel running, which allows voluntary exercise and may thus remove the potential stress involved

in treadmill running, has also been shown to have positive effects on 6-OHDA-lesioned rat behaviour. Research from our laboratory has shown that wheel running exercise significantly reduces apomorphine rotation in lesioned rats (Howells *et al*, 2005), as well as reducing forelimb akinesia and asymmetry (Mabandla & Russell, 2010).

3.2.2 Neurochemical Effects

The beneficial consequences of exercise on the extent of 6-OHDA lesion are not limited to behavioural effects. Numerous studies have shown that activity-related manipulations promote sparing of TH-positive neurons, at both the SN (Anstrom *et al*, 2007; Howells *et al*, 2005; Jadavji, Kolb & Metz, 2006; Yoon *et al*, 2007) and striatal (Yoon *et al*, 2007) levels. Both forced use of the impaired forelimb (Tillerson *et al*, 2001) and treadmill running (Tillerson *et al*, 2003) significantly reduced the loss of DA and its metabolites in the lesioned striatum following 6-OHDA treatment. Other studies observed a less robust effect. Steiner *et al* noted that rotarod training in combination with enriched environment did not improve the survival of TH neurons in the SN, although enhanced plasticity of non-TH positive cells was observed (2006). Interestingly, Mabandla and Russell showed that running wheel exercise tended to reduce TH immunoreactivity in the non-lesioned SN, thus reducing behavioural asymmetry without having a specific neuroprotective effect (2010). This suggests that a possible effect of exercise may be to promote compensation for behavioural and neural deficits.

3.3 PUTATIVE MECHANISMS FOR EXERCISE-INDUCED NEUROPROTECTION

A variety of mechanisms have been investigated as potential mediators of the beneficial effects of exercise.

3.3.1 Enhanced Synaptic Plasticity and Expression of Neurotrophic Factors

Running wheel exercise has been shown to upregulate an array of proteins involved in synaptic plasticity (Ding *et al*, 2006b), as well as to increase expression of transcription factors which may well be involved in modulating such plasticity (Ding *et al*, 2006a). A number of studies, moreover, have observed a significant effect of exercise on the expression and distribution of neurotrophic factors. Forced limb-use following cortical injury was shown to upregulate basic fibroblast growth factor (FGF-2; Bury *et al*, 2000); Gómez-Pinilla and colleagues observed an increase in FGF-2 mRNA in the hippocampus after four nights of wheel running (Gómez-Pinilla, Dao & So, 1997) and three days of swimming (Gómez-Pinilla, So & Kesslak, 1998). Ding *et al* demonstrated that running wheel exercise increased expression of insulin-like growth factor 1 (IGF-1) in the hippocampus, and that this was associated with certain of the positive effects of exercise on water maze learning (2006a); significantly, Carro *et al* noted that blockade of IGF-1 entrance to the brain abrogated exercise-induced recovery of motor function following experimental neurodegeneration (2001). Following several days of wheel running, BDNF expression was increased in the hippocampus (Johnson *et al*, 2003), and its mRNA was upregulated in hippocampus, cortex and cerebellum (Neeper *et al*, 1996); Radak *et al* noted a similar increase in BDNF in the hippocampus as a consequence of swimming training (2006). Running wheel exercise has been shown, additionally, to increase expression of the Trk receptor for BDNF, and blockade of this receptor prevented the exercise-induced increase in cAMP response element binding

protein (CREB), a transcription factor responsible for initiating a number of synaptic-plasticity associated signalling cascades (Vaynman, Ying & Gomez-Pinilla, 2003). Increased growth factor expression serves to enhance cell survival (Borgal *et al*, 2007), and may even preserve dopaminergic neurons and motor function following 6-OHDA lesion (Ebert *et al*, 2008). Salinas and colleagues demonstrated that nerve growth factor (NGF) induced the expression of heme oxygenases, antioxidant enzymes which protected dopaminergic neurons against 6-OHDA-induced oxidative damage (2003), suggesting that the upregulation of growth factor expression by physical activity may be a significant means by which exercise provides protection against 6-OHDA.

3.3.2 Alterations in Oxidative Status

As previously described, 6-OHDA exerts its toxic effects primarily through inducing oxidative damage. It is of interest, therefore, to observe that exercise has been shown to alter oxidative profiles. Numerous studies have shown that physical activity induces changes in the activity of antioxidant enzymes, both peripherally (Liu *et al*, 2000; Reddy Avula *et al*, 2001) and in the brain (Liu *et al*, 2000). Chronic swim exercise increased superoxide dismutase (SOD), glutathione peroxidase (GPx) and catalase (CAT) activities in hippocampus and cortex (Devi & Kiran, 2004). Acute treadmill exercise was shown to increase the activity of SOD, GPx and glutathione reductase in the striatum (Somani *et al*, 1996; Somani, Ravi & Rybak, 1995). Liu *et al* also observed that chronic treadmill training increased brain levels of ascorbic acid, a ROS scavenger (2000). Increased activity of endogenous antioxidant systems enhances the ability of the brain to withstand oxidative damage, such as that induced by 6-OHDA. Exercise has also been shown to reduce levels of ROS; Devi & Kiran noted reduced lipid peroxidation following chronic swimming (2004), and lower levels of ROS in the

cerebellum were observed by Radak and colleagues after a similar exercise protocol (Radak *et al*, 2006). Conversely, numerous studies have observed increased levels of ROS following exercise (Aoi *et al*, 2004; Liu *et al*, 2000; Somani *et al*, 1996). However, the mild oxidative stress induced by exercise has a valuable physiological function; slightly increased ROS cause the upregulation of antioxidant enzymes by inducing expression of the transcription factor NF-κB (Aoi *et al*, 2004; Gomez-Cabrera, Domenech & Viña, 2008).

It has been observed that the brainstem and striatum may be more sensitive to the effects of oxidative stress (Somani, Ravi & Rybak, 1995). If exercise serves to protect against this stress, both by increased antioxidant enzyme activity and by altered production or impact of ROS, this may be a significant mechanism by which exercise induces neuroprotection against 6-OHDA.

A number of studies have observed effects of exercise directly on the dopaminergic system. Tillerson *et al* showed that treadmill running (2003) as well as forced limb-use (2001), significantly spared expression of the vesicular monoamine transporter VMAT-2 after 6-OHDA lesion. VMAT-2 may sequester 6-OHDA into synaptic vesicles, thus reducing its toxic impact on the neuron (Tillerson *et al*, 2001); prevention of its loss might well enhance survival of dopaminergic neurons exposed to 6-OHDA. Furthermore, exercise has been shown to enhance DA synthesis through a calcium/ calmodulin-dependent pathway (Sutoo & Akiyama, 2003); increased dopaminergic neurotransmission from surviving terminals in the striatum would serve to lessen the impact of the 6-OHDA lesion.

The exact mechanisms whereby exercise induces its neuroprotective effects remain to be further elucidated. However, whether they occur by induction of growth factors and concomitant enhanced synaptic plasticity, by increased protection against oxidative stress, by other mechanisms as yet undescribed, or – which is most likely – by a combination of factors,

such neuroprotective effects are well-documented. Moreover, that exercise of various types provides specific protection against the effects of 6-OHDA has been suggested in several studies.

4. THE EFFECTS OF STRESS ARE DEPENDENT ON GENDER

Considerable evidence supports the concept of differential responses to stress in males and females. Women have been shown to be more likely to develop PTSD, anxiety or affective disorders following traumatic events (Cottler, Nishith & Compton, 2001; Ehring, Razik & Emmelkamp, 2009). Depression or anxiety as a comorbidity of chronic pain is greater among women than men (Tsang *et al*, 2008). Even in healthy individuals, women have a heightened subjective perception of stress than men (Kudielka *et al*, 1998). HPA axis responses also differ based on gender. Kudielka *et al* noted that men had a significantly exaggerated ACTH and cortisol response to stress than women (1998). Even in victims of early life stress such sex effects are observed: women who were separated from their parents as children show greater baseline HPA measures, while men who experienced the same trauma exhibit a heightened HPA response to a later stressor (Pesonen *et al*, 2010).

Studies in rats show that they exhibit similar sexual dimorphism in response to stress. Subsequent to chronic social stress in adolescence, female rats were significantly hyperactive in the EPM and spent more time in the open arms than controls, while no such effect was observed in male rats in the same study (McCormick, Smith & Matthews, 2008). Lehmann *et al* (1998) and Slotten *et al* (2006) observed a similar enhanced activity in females compared to males following MS. Females were shown to exhibit greater deficits in latent inhibition (Lehmann *et al*, 1998) and object location (Mourlon *et al*, 2010) tasks than males following MS. By contrast, Spivey *et al* (2009) demonstrated that activity in the open field was increased in males previously subjected to MS, while female rats did not show this effect; greater MS-induced anxiety-like behaviour in the EPM was observed in males than females by Wigger & Neumann, (1999). MS induced significantly enhanced acoustic startle in male rats, but not in females; the same study showed that separated males were far more likely to

emit ultrasonic distress vocalisation in response to stress than separated females (Kalinichev *et al*, 2002).

As in humans, HPA responses to stress in rats vary based on sex. Slotten *et al* (2006) showed that previously separated females had higher baseline and stress-induced CORT and ACTH levels than similarly-treated males. Wigger & Neumann, on the other hand, noted a similar CORT profile in non-maternally separated females and males, but observed that MS increased the ACTH response to stress in males preferentially, while having no effect in females (1999). Furthermore, both MRs and GRs were downregulated following MS in males, while in females neither receptor was affected in this way (Sutanto *et al*, 1996). The latter results suggest that MS has more potent effects in males than in females, a result which is supported by evidence of MS-induced PFC thickness reduction in males compared to females (Spivey *et al*, 2009) and enhanced neuronal degeneration and astrocyte activation in males than females following MS (Llorente *et al*, 2009).

Pienaar *et al* (2007) showed that the behavioural and neurochemical effects of unilateral 6-OHDA lesion of the MFB were significantly greater in adolescent male rats than females. On the other hand, MS was observed by the same researchers to enhance the extent of 6-OHDA striatal lesion in female adolescent rats (Pienaar *et al*, 2008).

In summary, therefore, it has been observed that early developmental stress enhances the vulnerability of the brain to later insult, and furthermore, that such vulnerability exists even when the insult is etiologically not directly related to the initial stressor. Several studies have demonstrated that MS, as a well-characterised model of early developmental stress, increases the toxic behavioural and neurochemical effects of 6-OHDA infusion into the nigrostriatal system. However, these studies have almost uniformly involved 6-OHDA infusion during

adulthood; Pienaar *et al* (2008) used adolescent females. It is of interest, therefore, to determine whether the positive results these studies have obtained can be extended to the effects of 6-OHDA infusion in adolescent male rats.

In addition, research into the effects of physical exercise on 6-OHDA-lesioned rats strongly suggests that exercise may provide protection against the behavioural and/ or neurochemical effects of 6-OHDA infusion. This has been shown in several studies, but again, these have made use of adult rats. Investigation into the potential beneficial effects of physical exercise before and after 6-OHDA infusion in adolescence is thus warranted.

This thesis therefore comprised two parts. The aims of the first study were as follows:

a) To determine whether maternal separation enhances the forelimb asymmetry and akinesia induced by unilateral 6-OHDA infusion into the striatum of adolescent male rats;

b) To determine whether voluntary running wheel exercise both prior to and following 6-OHDA intrastriatal infusion in adolescent male rats reduces the behavioural asymmetry and akinesia consequent to such infusion;

c) To determine whether maternal separation of male rats induces anxiety-like behavioural symptoms in the open field and EPM in late adolescence and early adulthood; and

d) To determine whether voluntary running wheel exercise is anxiolytic as determined by the same measures in c) above.

This study is described and discussed in chapter 2.

The aims of the second study were as follows:

a) To measure, by means of tyrosine hydroxylase immunohistochemistry, the loss of DA neurons in the SN consequent to intrastriatal infusion of 6-OHDA, and to determine whether increasing the concentration of 6-OHDA results in increased neuron loss;

b) To determine whether intrastriatal 6-OHDA infusion induces phosphorylation of c-Jun in the SN and whether the intensity of phospho-c-Jun staining is dependent on the dose of 6-OHDA used;

c) To determine, by means of tyrosine hydroxylase immunohistochemistry, whether maternal separation enhances the 6-OHDA-induced loss of DA neurons both at cell body and terminal level;

d) To determine, by means of tyrosine hydroxylase immunohistochemistry, whether the extent of the 6-OHDA-induced lesion is differentially affected by sex.

This study is described and discussed in chapter 3.

CHAPTER 2

Stress during early development has been shown to produce an array of deleterious effects, including increased susceptibility to the later development of depression and anxiety disorders. There is also strong evidence to suggest that such stress, occurring as it does during a period of great neurodevelopmental change, may sensitise the brain, making it more vulnerable to later unrelated insults.

Based on the above premise, it was hypothesised in this study that rats which had undergone early developmental stress in the form of repeated maternal separation in the first two weeks of post-natal life would exhibit an enhanced response to an intrastriatal 6-OHDA infusion. It was further hypothesised, given that exercise has been shown to have a range of beneficial effects, that rats which were allowed to exercise freely in running wheels both before and after toxin infusion would show reduced effects of the 6-OHDA infusion. Behavioural tests to investigate the above hypotheses were performed both two and four weeks following toxin infusion.

2.1 METHODS

2.1.1 ANIMALS

Male Sprague Dawley rats were obtained from the University of Cape Town (UCT) Animal Unit. Animals were housed under a light-dark cycle of 12h/12h (lights on 06h00 - 18h00, unless otherwise specified) and in controlled temperature (22 ± 1°C), with *ad libitum* access to food pellets and water. The study was approved by the Faculty of Health Sciences Animal Ethics Committee of UCT.

2.1.2 MATERNAL SEPARATION

Breeding for MS studies took place in the animal facility in the Department of Human Biology. Rats were harem mated, with two female rats per male rat. Male rats remained with the females for four days, which spanned the entire oestrus cycle of the females. Males were then removed. The females were allowed to remain in communal housing until the week in which birth was predicted (gestation was calculated as three weeks from the day on which mating began). At this point the dams were placed in individual cages.

The day of birth was designated P0. On P2 litters were culled to eight pups, which included as close to eight males as was possible. MS was carried out from P2 to P14. The dam was removed from the litter, and the home cage containing the litter was then taken to a separate room for three hours to prevent communication by means of supersonic vocalisations (Hofer, 1994). The temperature was maintained at 30-34ºC. MS was initiated no earlier than 9am and concluded no later than 1pm. Litters were returned to the animal unit and dams replaced in the home cage at the finish of the three hours. Control litters were left undisturbed apart from

normal animal house handling. Cage cleaning took place every second day, and consisted of the removal of half of the soiled bedding from the cage, and the replacement of this with fresh bedding. Soiled bedding was always removed from the side of the cage away from the nest, so as to disturb the dam and litter as little as possible.

2.1.3 EXERCISE USING RUNNING WHEELS

Litters were weaned at P21, and males and females housed separately. Only male rats were used in this study. From P21 rats were housed under a light/ dark cycle of 12h/ 12h (lights on 23h00-11h00), to allow for acclimatisation to the light/dark conditions under which voluntary exercise would be take place.

On P28, rats were weighed and placed into individual cages with attached running wheels. Control rats were placed in cages in which the running wheels had been immobilised. Distance run was monitored by means of mechanical counters attached to the wheels, and the number of wheel revolutions was recorded once a day between 10h00 and 11h00. Rats were housed in these cages for 21 days, and permanently removed on P49.

2.1.4 UNILATERAL INTRASTRIATAL 6-HYDROXYDOPAMINE INFUSION

6-hydroxydopamine-HCl (6-OHDA) was stored at -80°C. Prior to surgery, 1.5mg aliquots were weighed out and returned to -80°C. Vehicle solution consisting of 0.2% ascorbate in 0.9% sterile saline was made up on the day of surgery, and added to the 6-OHDA to a final

concentration of 1.5mg 6-OHDA in 500µL vehicle. This solution was stored at -20°C during surgery.

On P35, rats were removed from the running wheels, weighed, placed in individual cages and transferred to the laboratory where surgery was conducted. Rats were allowed to acclimatise to the laboratory environment for a minimum of 1 hour before surgery. Rats weighing less than 70g on P35 were not included in the study.

The 6-OHDA solution or vehicle was administered by means of a 27-gauge needle attached to a 25mL syringe, driven by an automated infusion pump (341-A model syringe pump, Sage Instruments, USA). Prior to surgery the syringe and needle were well-flushed with sterile saline, and then filled with the same. This process was repeated between each successive surgery.

Rats were anaesthetised by means of a ketamine/ xylazine mixture (200µL of 100mg/mL ketamine: 100µL of 20mg/mL xylazine, mixed immediately before administration) at a dose of 1mL mixture per kg body weight, administered by means of intraperitoneal (I.P) injection. Rats were determined to be sufficiently sedated when pain reflex (paw withdrawal in response to painful stimulus) and eyeblink reflex were absent, and surgery was only conducted under these conditions. Any rat that displayed these reflexes during the surgical procedure received a further I.P. administration of the ketamine/ xylazine anaesthetic.

All surgery was conducted under aseptic conditions. Gloves, laboratory white coat and surgical mask were worn at all times during surgery.

Once the rat was sufficiently anaesthetised hair was cut away from the surgical area (the scalp) and the entire area well-swabbed with a mixture of betadine and 70% ethanol. The rat was then placed on a heating pad, maintained at a temperature of 37°C, where it remained for

the duration of surgery. The head of the rat was positioned in the stereotaxic apparatus, with earbars positioned in the external auditory meati, and the jaw immobilised on the incisor bar.

An incision was made longitudinally in the scalp, and the tissue gently retracted to expose the skull from the interaural line to just anterior to bregma. Fascia was carefully scraped away with the blunt edge of a scalpel blade.

Correct positioning of the head in the stereotaxic apparatus was confirmed at this point. Prior to placement of the rat in the apparatus, the infusion needle was positioned in line with the uppermost surface of the ear-bars; this interaural line was taken to be the zero antero-posterior position, from which AP coordinates were measured. The head was assumed to be correctly positioned when this previously-determined needle position corresponded with lambda on the skull.

A small bubble of air was drawn into the needle, followed by approximately 10µL of either 6-OHDA solution or vehicle. The bubble served to prevent the mixing of the infusion solution and the saline already in the syringe, as well as a being a means by which infusion progress could be monitored.

The needle was moved to the correct stereotaxic coordinates. These were 8.0mm from interaural line in the AP plane, and 3.0mm from the central suture in the mediolateral plane, in the left hemisphere. This position was marked and a burr hole drilled in the skull at this point.

The dorso-ventral coordinate was measured from dura. The needle was slowly lowered to a depth of 5.0mm. The bevel of the needle was positioned to face anteriorly, so that the infused solution diffused towards the anterior portion of the striatum. 6-OHDA solution or vehicle was then infused through the needle at a rate of 1µL per minute, to a total volume of 4µL

(12µg 6-OHDA). Following infusion, the needle was allowed to remain *in situ* for 5 minutes. This allowed for adequate diffusion of the solution from the infusion site, and prevented it from being sucked back up when the needle was retracted.

The needle was slowly retracted, and the scalp drawn back over the operational site. The incision was closed with between four and six sutures, and the entire area swabbed with the betadine/ ethanol solution.

The rat was returned to its cage, and placed under a heating lamp until fully recovered from the anaesthetic. Recovery was considered adequate when the rat was eating, drinking and moving steadily about in its cage. At this point, the rat was returned to its home cage with the attached running wheel in the animal room.

Following surgery, rats were monitored for ten days for any sign of post-operative complications. An example of the care sheet can be found in appendix A4.

2.1.5 BEHAVIOURAL TESTING: P49

On P49, rats were removed from the running wheels, weighed, placed in individual cages and taken to the behavioural suite, where they were allowed to acclimatise to the new environment for at least one hour before the commencement of behavioural testing. Behavioural testing took place after 11:00 am, i.e. during the dark phase of the rats' daily cycle.

Four behavioural tests were performed. The step test of forelimb akinesia (Tillerson *et al*, 2001; Woodlee *et al*, 2008), and the cylinder test of forelimb use for vertical-lateral exploration (Schallert *et al*, 2000; Schallert, 2006), evaluated 6-OHDA-induced asymmetry. The open field and EPM tests were used to evaluate the effects of MS and exercise on

anxiety-like behaviour and spontaneous locomotor activity. All rats were allocated a number code, to enable blindness of the tester to experimental treatment. Tests were performed in the following order: step test, open field, EPM, cylinder test. Rat order was randomised.

2.1.5.1 THE STEP TEST

Rats were gently handled for a brief period (approximately five minutes). The rat was then held by the tester in both hands. One hand supported the rat's torso and restrained the hind limbs. The other hand restrained one forepaw. The rat was held at an angle to the testing surface, with its nose pointing downwards and one paw resting on the surface.

A sheet of sandpaper was taped to the surface to prevent the rat's paw from slipping. A ruler marked off in centimetres was taped along one side. The paw being tested was placed at zero beside the ruler, and the rat moved gently forward, with its body weight resting on the free paw.

In order to regain postural stability as its body weight was moved forward, the rat took a bracing step. The length of this step was measured and recorded. This was repeated five times for each paw.

2.1.5.2 THE CYLINDER TEST

The apparatus for this test consisted of a clear transparent Plexiglas cylinder, 20cm diameter, 30cm height, placed on a flat surface. At an angle behind the cylinder a mirror was positioned to enable complete visibility of the rat's movements. The test was video-recorded for later analysis.

The rat was placed in the cylinder, with the test considered to have begun when all four paws were on the floor of the cylinder. Rats were recorded for ten minutes: the first five minutes took place in the light, and the second five minutes with the light off. This was done because certain rats had very low levels of activity in the light, which would have tended to reduce the ability of the test to measure accurate motor asymmetry in these rats.

Following the test, the rat was returned to its cage and the cylinder wiped down with 70% ethanol.

2.1.5.3 THE OPEN FIELD

The open field consisted of a wooden box, 1m square, enclosed by 50cm high walls. The inside of the box was painted black. On the floor of the box an inner square, the inner zone, was demarcated by means of four thin white lines, situated 15cm in from the walls (see Fig 2.1).

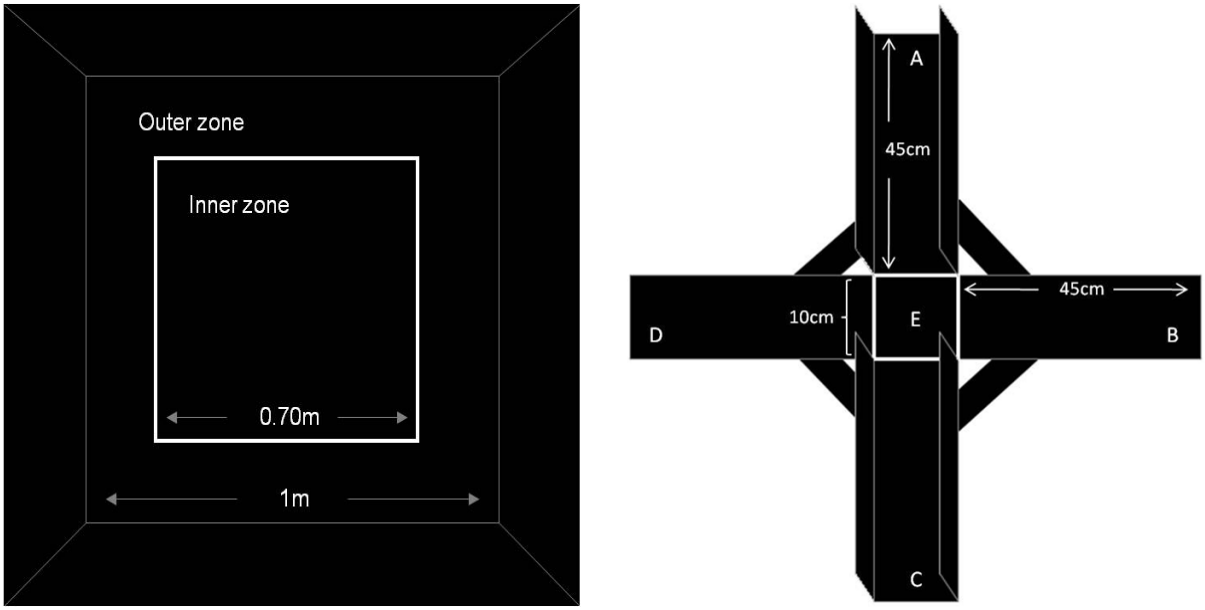

Figure 2.1 *Open Field and Elevated Plus Maze, with layout and dimensions.*

The rat was placed in one corner of the open field, facing the wall, and its behaviour video-recorded for ten minutes. This test took place in the light. Following the test, the rat was removed from the open field and immediately placed in the EPM.

2.1.5.4 THE ELEVATED PLUS MAZE

The EPM consisted of a wooden "plus" shape, raised 50 cm above the floor. Four wooden arms, 45cm in length, extended from a central square of dimensions 10cm by 10 cm. Two of the arms, designated the "closed arms", were enclosed on either side by wooden walls, 30 cm in height. The alternate arms (the "open arms") were not enclosed. The entire apparatus was painted black. (See Fig. 2.1).

The rat was placed in the central square of the EPM and behaviour was video-recorded for five minutes.

At the conclusion of the test, the rat was returned to its cage and both the open field and EPM were wiped down with a solution of 70% ethanol. This removed any odour of the rat which might have influenced the behaviour of rats which were later placed in the apparati.

Analysis of the open field, EPM and cylinder tests is discussed below.

Following the behavioural testing, rats were housed communally, with either two or three rats caged together. Cage partners were randomly assigned. Rats were returned to the original light/dark cycle (lights on 06:00 – 18:00).

2.1.6 BEHAVIOURAL TESTING: P63

On P63, rats were weighed and taken in their home cages to the behavioural suite, where they were allowed to acclimatise for at least one hour prior to testing. Testing took place after 11:00 and before 18:00.

Tests were performed as on P49.

Following testing rats were returned to their home cages and then to the animal room.

2.1.7 ANALYSIS OF BEHAVIOURAL TESTS

2.1.7.1 CYLINDER TEST

Analysis of the cylinder test was done manually. All rats were identified by means of the numerical codes mentioned above, which enabled analysis to be blind to treatment condition.

Three parameters were measured. Rearing consisted of the rat rising on its hind paws and placing one or both paw(s) on the wall of the cylinder. A rear was scored as a "left" if the first paw placed was the left paw, and similarly for the right paw. A rear was scored as "both" if both paws were placed simultaneously. Stepping consisted of successive placements of the paws along the wall of the cylinder. A stepping movement was scored as "left" if successive movements were made with the left paw only, and similarly for the right paw. If paws were used alternatively or indiscriminately, the stepping movement was scored as "both". Total time spent grooming was also recorded.

Initially it was intended to include a landing score. This would have been a measurement of paw use upon landing after a rear: preferential use of either paw would have been a score for that paw, and landing with both paws would have scored as "both". However, the quality of

the video recording was too poor to allow for an accurate determination of this measure, as the exact paw used in landing was often obscured.

Paw uses were summed, and expressed as percentage left limb use according to the following formula (Schallert *et al*, 2000; Schallert, 2006):

$$\% \text{ left limb use} = 100 \times [X + Y]/ Z$$

where

X = "left" rearing score + "left" stepping score

Y = 0.5 x ["both" rearing score + "both" stepping score]

Z = [sum of all rearing scores and all stepping scores].

Total rearing was summed, as was total stepping, and these two were additionally summed together. These were used as measures of total activity in the cylinder. Total time spent grooming was expressed as a percentage of total time spent in the cylinder.

2.1.7.2 OPEN FIELD AND EPM

Video recordings of the open field and EPM tests were analysed using Noldus Ethovision XT 5.0. This software package allows automated tracking of the rat's activity, and can be used for measurement of a variety of behavioural parameters. The rat is tracked by means of the largest collection of pixels (i.e. over the torso region), and line crossings are thus scored when this region passes over the line. The software scores this automatically. A detailed step-by step description of the analysis is provided in appendix A2.1.

In the open field, total distance moved, mean and maximum velocity and latency and frequency of entry and duration in the inner and outer zones were determined. All of these parameters were measured over the full 10 minute period, two consecutive 5 minute periods and ten consecutive 1 minute periods.

In the EPM, the following variables were analysed: total distance moved, mean and maximum velocity and frequency and duration in the open and closed arms. Duration in the central square was manually calculated as Arena duration – (open arm duration + closed arm duration). All of these parameters were measured over the full 5 minute period and 5 consecutive 1 minute periods.

2.1.8 STATISTICS

STATISTICA software, version 9.0, StatSoft, Inc. (2009) was used for statistical analysis. Data was analysed using factorial ANOVA for multiple comparisons and repeated measures ANOVA where appropriate. ANOVA results were considered statistically significant where $p < 0.05$. Where this was the case, post hoc analysis was carried out by means of Newman Keuls tests.

Details of analysis of individual studies are described in the results sections of those studies.

Data are presented as mean ± SEM unless otherwise specified.

2.1.9 MATERIALS

A list of materials and suppliers is provided in appendix A1.

2.2 RESULTS

2.2.1 WEIGHTS AND RUNNING DATA

2.2.1.1 WEIGHTS

Rats were weighed on the following days: P28, P35, P49 and P63. Weights were analysed by means of factorial ANOVA, and significant effects ($p < 0.05$) were further analysed by Newman-Keuls post hoc tests. Comparisons between different weighing days were performed using repeated measures ANOVA. Data are presented as mean ± SEM. *See appendix A5.1.1.*

2.2.1.1.1 P28

Factorial ANOVA revealed a significant interaction between exercise and lesion ($F_{1,55} = 4.018$, $p = 0.0499$). Post hoc analysis revealed no significant individual differences between these groups. Mean weight at this age was 63.5 ± 0.872g.

2.2.1.1.2 P35

No significant differences were observed between groups at this age. Mean weight was 95.9 ± 1.256g.

2.2.1.1.3 P49

No significant differences were observed between groups at this age. Mean weight was 168.3 ± 2.811g.

2.2.1.1.4 P63

No significant differences were observed between groups at this age. Mean weight was 255.0 ± 3.982g.

Table 2.1 *Mean ± SEM for weights of rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Weight < P35, P49, P63 *p<0.001; weight < P49, P63 $^{@}$p<0.001; weight < P63 $^{\#}$p<0.001.*

	n	P28 (g)	P35 (g)	P49 (g)	P63 (g)
nMSnRnL	8	63.7 ± 2.328*	94.9 ± 3.557$^{@}$	152.3 ± 9.590$^{\#}$	237.6 ± 12.98
nMSnRL	7	61.4 ± 2.831*	97.8 ± 4.127$^{@}$	152.6 ± 7.875$^{\#}$	240.2 ± 11.83
nMSRnL	9	62.1 ± 2.070*	93.6 ± 2.720$^{@}$	163.2 ± 5.520$^{\#}$	256.6 ± 5.321
nMSRL	8	66.7 ± 1.993*	97.3 ± 3.262$^{@}$	158.9 ± 8.192$^{\#}$	259.9 ± 9.300
MSnRnL	7	63.6 ± 2.898*	99.8 ± 4.690$^{@}$	171.8 ± 10.21$^{\#}$	269.2 ± 16.51
MSnRL	7	59.1 ± 3.357*	95.4 ± 5.059$^{@}$	170.9 ± 9.408$^{\#}$	261.7 ± 15.06
MSRnL	8	64.0 ± 2.562*	93.7 ± 3.726$^{@}$	160.1 ± 5.301$^{\#}$	257.2 ± 13.56
MSRL	9	66.5 ± 1.872*	96.2 ± 2.852$^{@}$	162.3 ± 8.152$^{\#}$	262.2 ± 8.129

2.2.1.1.5 Comparison of different weighing days

Repeated measures analysis showed a significant effect of time on weight ($F_{3,150}$ = 2296.373, p = 0.000). Post hoc analysis showed that weight increased significantly on each weighing day; weight was significantly greater on each day than on every previous day ($p < 0.001$ in each case). A significant interaction was observed between time and MS ($F_{3,150}$ = 3.443, p = 0.018). A significant interaction was also observed between time, MS and exercise ($F_{3,150}$ = 3.652, p = 0.014). *See Table 2.1.*

2.2.1.2 RUNNING DISTANCES

Rats were placed in running wheels on P28. Distance run was measured every day between 10 and 11 am, from P29 to P49. Total distance run was compared by means of factorial ANOVA, and significant effects ($p < 0.05$) were further investigated with Newman-Keuls

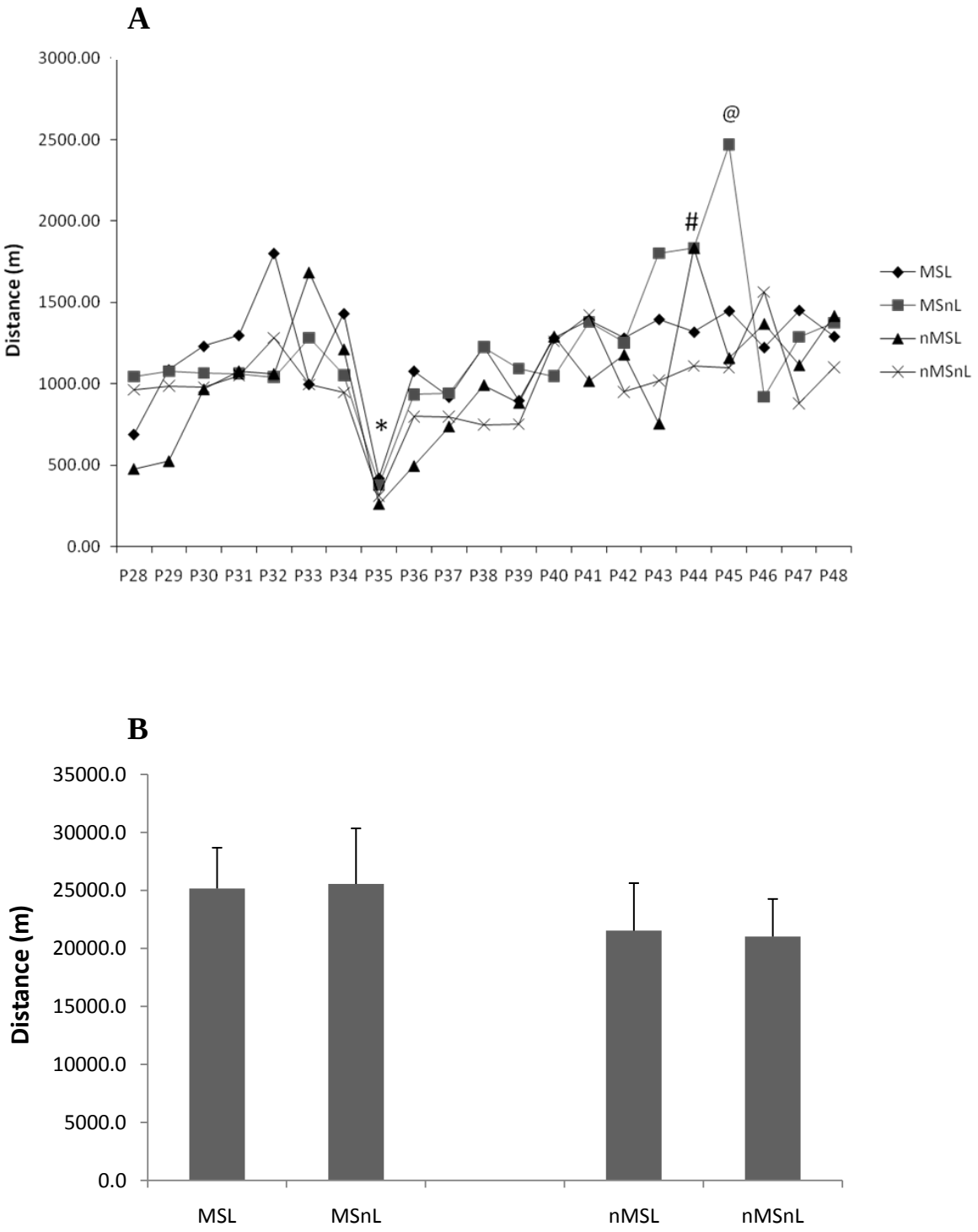

Figure 2.2 *Distance travelled in running wheels from P28 to P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) from P28 to P49. A) Distance travelled daily. *Distance lower than all other days ($p < 0.05$); $^{\#}$distance higher than on P28, P36 and P37 ($p < 0.05$); $^{@}$distance higher than on P28, P36, P37 and P39. B) Total distance travelled (no significant differences). Data shown as Mean + SEM. MSL: n=9; MSnL: n=8; nMSL: n=8; nMSnL: n=9.*

post hoc tests. Comparisons between different days were performed using repeated measures ANOVA. Data are presented as mean ± SEM. *See Appendix 5.1.2.*

2.2.1.2.1 Total distance run

No significant effect of treatment condition was observed on total distance run over the full twenty-one days. Across all groups distance run was 23300 ± 1894m in three weeks. *See Fig. 2.2B.*

2.2.1.2.2 Comparison of individual days

Repeated measures analysis revealed a significant effect of time on distance run ($F_{20,600}$ = 4.680, p = 0.000). Post hoc analysis showed that distance run on P35 was significantly lower than on all other days. Distance run on P44 was significantly higher than on P28, P36 and P37 ($p < 0.05$ in all cases); distance run on P45 was significantly higher than on P28, P36, P37 and P39 ($p < 0.05$ in all cases). There was no significant interaction between time and either MS or lesion. *See Fig. 2.2A.*

2.2.2. BEHAVIOURAL TESTS

A total of 62 male Sprague-Dawley (SD) rats was used for this study. Rats underwent maternal separation (MS), a voluntary exercise regime (R) and a 6-OHDA striatal lesion (L), with appropriate controls for each treatment (non-separated, non-exercised and sham-lesioned) as previously described. This resulted in eight different groups: MSRL (maternally separated, exercised, lesioned, n = 8); MSRnL (maternally separated, exercised, non-lesioned, n = 9); MSnRL (maternally separated, non-exercised, lesioned, n = 7); MSnRnL (maternally separated, non-exercised, non-lesioned, n = 7); nMSRL (non-separated, exercised, lesioned, n = 8); nMSRnL (non-separated, exercised, non-lesioned, n = 9); nMSnRL (non-separated,

non-exercised, lesioned, n = 7); and nMSnRnL (non-separated, non-exercised, non-lesioned, n = 7). Rats underwent four tests: the open field test, the EPM, the cylinder test and the step test. All tests were performed on P49 and P63.

2.2.2.1 STEP TEST

Step length was determined for each paw individually, and the ratio between the paw lengths was calculated according to the following formula:

Ratio = [Right paw step length/Left paw step length] x 100

Data were analysed by factorial ANOVA for both P49 and P63, and compared on the two days using repeated measures ANOVA. Significant results ($p < 0.05$) were further investigated by means of post hoc Newman Keuls tests. *See appendix A5.1.3.*

2.2.2.1.1 P49

2.2.2.1.1.1 Left Paw Step Length

No significant differences were observed for left paw step length. *See Fig. 2.3A.*

2.2.2.1.1.2 Right Paw Step Length

A significant effect of the lesion was observed on right paw step length ($F_{1,54} = 11.560$, $p = 0.001$). Post hoc analysis showed that lesioned rats had a significantly longer step length than non-lesioned rats. A significant interaction between exercise and lesion was also observed for right paw step length ($F_{1,54} = 0.032$). Post hoc analysis showed that while right paw length was greater in lesioned rats than in non-lesioned rats, this was only significant for runners. *See Fig 2.3A.*

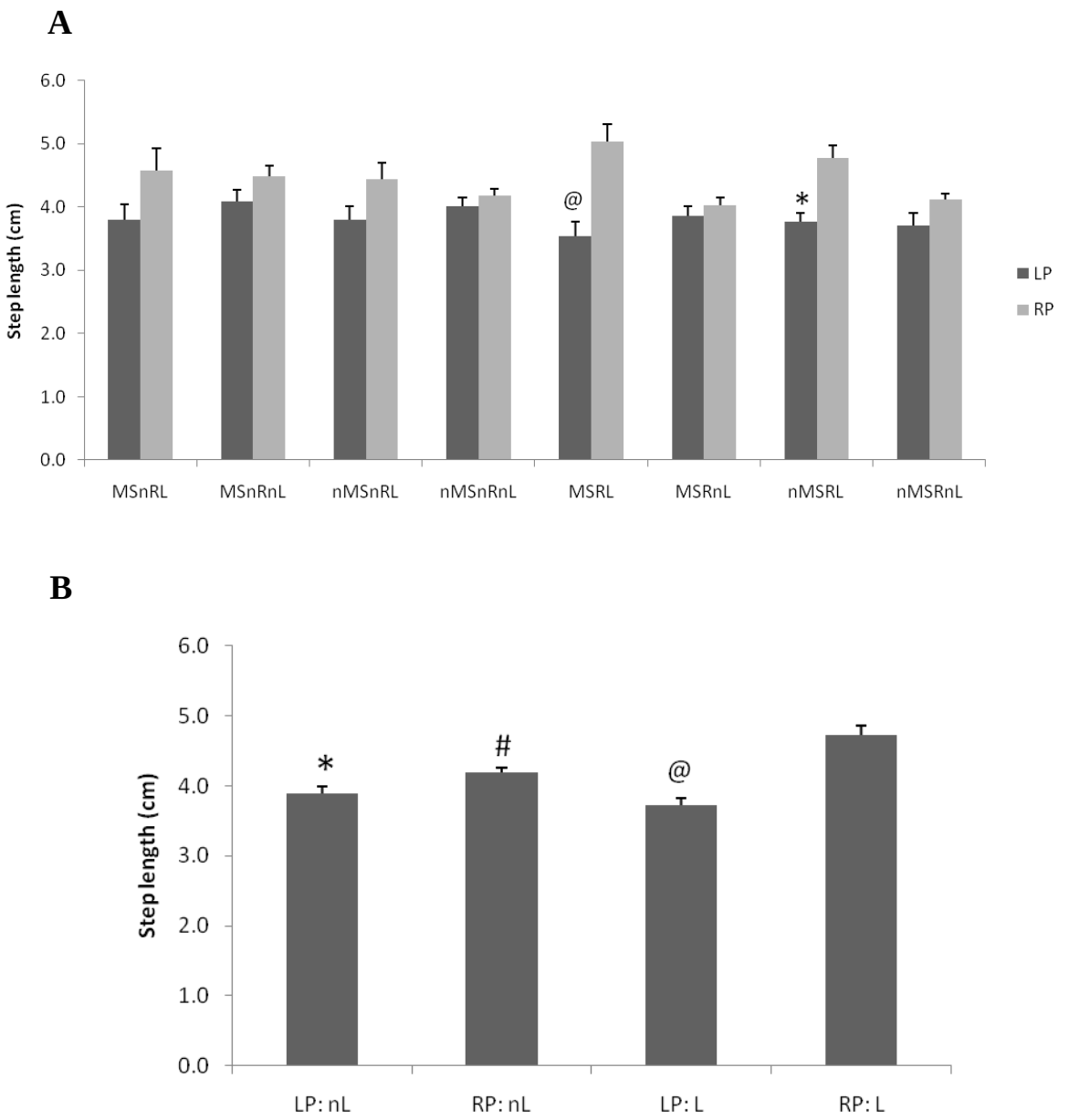

Figure 2.3 *Comparison of left and right paw step lengths in the "step test" for forelimb akinesia on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Comparison of all groups: Left paw < right paw ($p<0.001$): *$p<0.05$; $^{@}p<0.001$. B) Data collapsed across MS and R status to show effect of lesion. Left paw < Right paw *$p<0.05$; $^{@}p<0.001$; RP: nL < RP: L $^{\#}p<0.001$. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

Table 2.2 *Mean ± SEM of paw step length ratios (100 x RP/LP) in the step test for forelimb akinesia by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. nL < L *p<0.05.*

	n	P49	P63
nMSnRnL	8	104.6 ± 4.429	106.0 ± 2.831
nMSnRL	7	117.8 ± 6.328	119.9 ± 10.16
nMSRnL	9	114.8 ± 8.967	105.5 ± 4.897
nMSRL	8	128.9 ± 9.076	132.1 ± 15.15
MSnRnL	7	110.8 ± 5.824	100.8 ± 2.702
MSnRL	7	120.7 ± 6.716	124.4 ± 8.488
MSRnL	8	106.1 ± 6.887 *	102.1 ± 3.314
MSRL	9	147.5 ± 14.24	135.7 ± 11.90

2.2.2.1.1.3 Paw Step Length Ratio

A significant effect of the lesion was observed on paw length ratio ($F_{1,54} = 9.518$, $p = 0.003$). Post hoc analysis showed that lesioned rats had a significantly higher paw length ratio than non-lesioned rats. *See Table 2.2*

2.2.2.1.1.4 Comparison of Left and Right Paw Step Lengths

Comparison of left and right paw step lengths by repeated measures ANOVA showed a significant difference between paw lengths ($F_{1,54} = 42.212$, $p = 0.000$). Post hoc analysis showed that right paw step was significantly longer than left paw step. A significant interaction between paw and lesion was observed ($F_{1,54} = 12.678$, $p = 0.001$). Post hoc analysis showed increased right paw length in both non-lesioned ($p = 0.039$) and lesioned (p

= 0.000) rats as compared to their respective left paws, and that lesioned right paw length was significantly greater than non-lesioned right paw length (p = 0.000). *See Fig 2.3 B.*

2.2.2.1.2 P63

2.2.2.1.2.1 Left Paw Step Length

No significant differences were observed for left paw step length. *See Fig 2.4A.*

2.2.2.1.2.2 Right Paw Step Length

A significant effect of the lesion was observed on right paw step length ($F_{1,54}$ = 12.709, p = 0.0008). Post hoc analysis showed that lesioned rats had a significantly longer step length than non-lesioned rats. *See Fig 2.4A.*

2.2.2.1.2.3 Paw Step Length Ratio

A significant effect of the lesion was observed on paw step length ratio ($F_{1,54}$ = 15.252, p = 0.0003). Post hoc tests showed that lesioned rats had a significantly higher paw step length ratio than non-lesioned rats. *See Table 2.2.*

2.2.2.1.2.4 Comparison of Left and Right Paw Step Lengths

Comparison of left and right paw step lengths by repeated measures ANOVA showed a significant difference between paw lengths ($F_{1,54}$ = 28.378, p = 0.000), with right paw step length significantly greater than left. An interaction between paw and lesion was also observed ($F_{1,54}$ = 17.788, p = 0.000). Post hoc analysis showed that lesioned right paw step length was significantly greater than left paw step length of both non-lesioned and lesioned rats (p = 0.000 in both cases) and also than non-lesioned right paw step length (p = 0.000). *See Fig 2.4 B.*

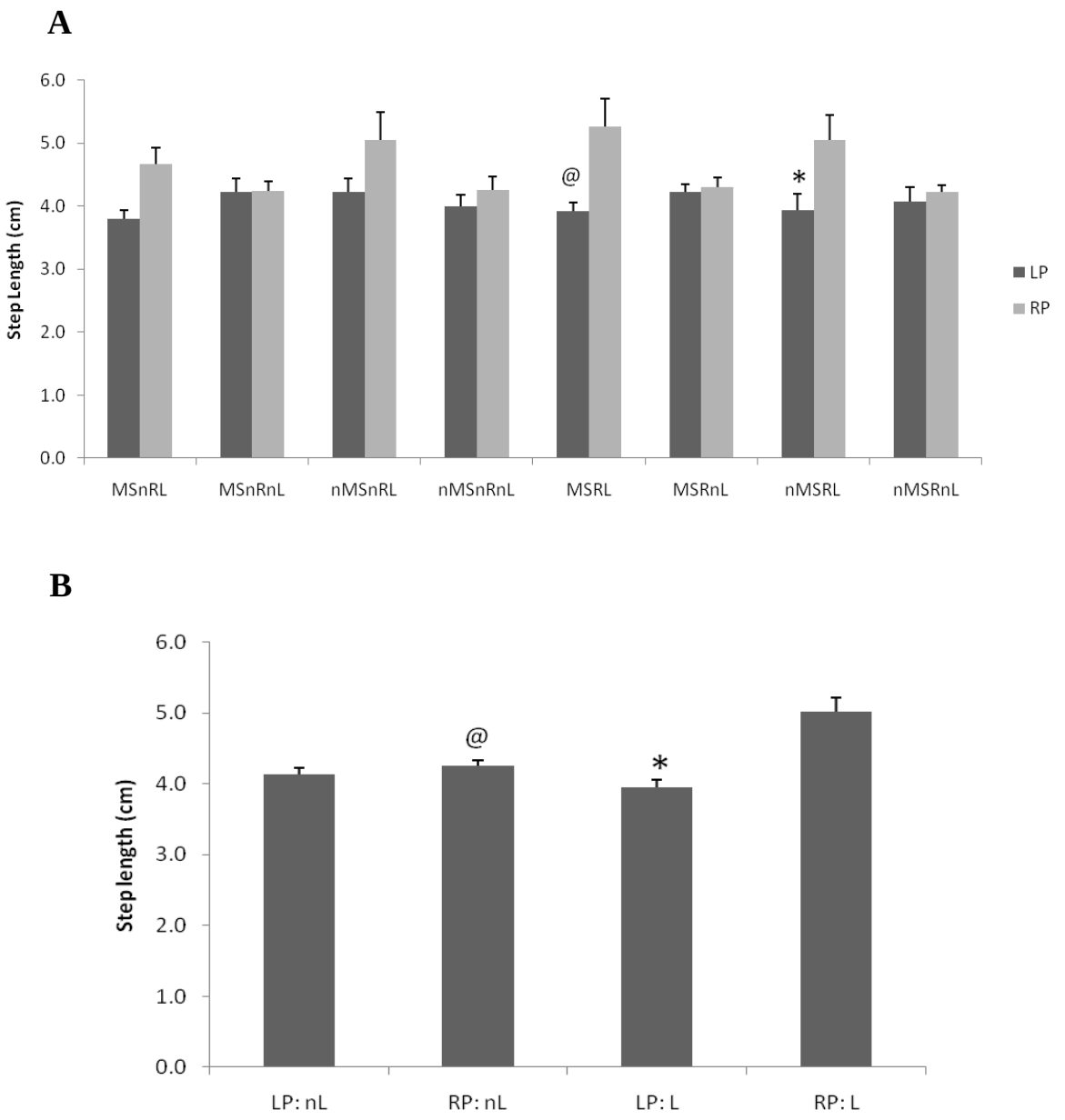

Figure 2.4 *Comparison of left and right paw step lengths in the "step test" for forelimb akinesia on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Comparison of all groups: Left paw < right paw ($p<0.001$): *$p<0.05$, @$p<0.01$. B) Data collapsed across MS and R status to show effect of lesion. Left paw < right paw *$p<0.001$; RP: nL < RP: L, $^{@}p<0.001$. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

2.2.2.1.3 Comparison of P49 and P63

2.2.2.1.3.1 Left Paw Step Length

A significant effect of time was observed on left paw step length ($F_{1,54}$ = 5.879, p = 0.019), with step length significantly greater on P63 than on P49.

2.2.2.1.3.2 Right Paw Step Length

No significant effect of time was observed on right paw step length, although there was a tendency for step length to increase over time (p = 0.068).

2.2.2.1.3.3 Paw Step Length Ratio

No significant effects of time were observed on paw step length ratio.

2.2.2.2 OPEN FIELD

The following parameters of open field activity were analysed: distance travelled in the open field, frequency of entry into and duration in the inner zone, latency of entry into the inner zone, and mean and maximum velocities. Each parameter was analysed over the full ten minute period, and then for successive 5 minute intervals and successive 1 minute intervals. Results were analysed by factorial ANOVA. The smaller time intervals were further analysed by means of repeated measures ANOVA. Furthermore, behaviour on P49 and P63 in terms of the above parameters was compared by means of repeated measures ANOVA of the full ten minutes. Any significant results ($p < 0.05$) were investigated by means of post-hoc Newman-Keuls tests. *See appendix A5.1.4.*

2.2.2.2.1 P49

2.2.2.2.1.1 Full Ten Minutes

a) Distance moved

A significant effect of MS was observed for the total distance moved in the open field ($F_{1,54}$ = 7.611, p = 0.008). Post hoc analysis showed that rats subjected to MS moved a significantly greater distance than non-separated rats. A significant effect of exercise was also observed for this parameter ($F_{1,54}$ = 28.763, p = 0.000). Post hoc analysis revealed that runners travelled a significantly shorter distance in the open field than non-runners. *See Fig 2.5A.*

b) Duration in the Inner Zone

No significant differences were observed for any treatment condition for duration in the inner zone of the open field. *See Fig. 2.5B.*

c) Frequency of Entry into the Inner Zone

A significant interaction was observed between MS and exercise ($F_{1,54}$ = 5.446, p = 0.023). Post hoc analysis revealed no significant differences between any individual groups, but a tendency was observed for exercise to reduce frequency of entry into the inner zone in the non-separated group and increase it in the separated group. *See Fig. 2.5C.*

d) Latency of Entry into the Inner Zone

No significant differences were observed for any treatment condition for latency of entry into the inner zone. *See Fig. 2.5D.*

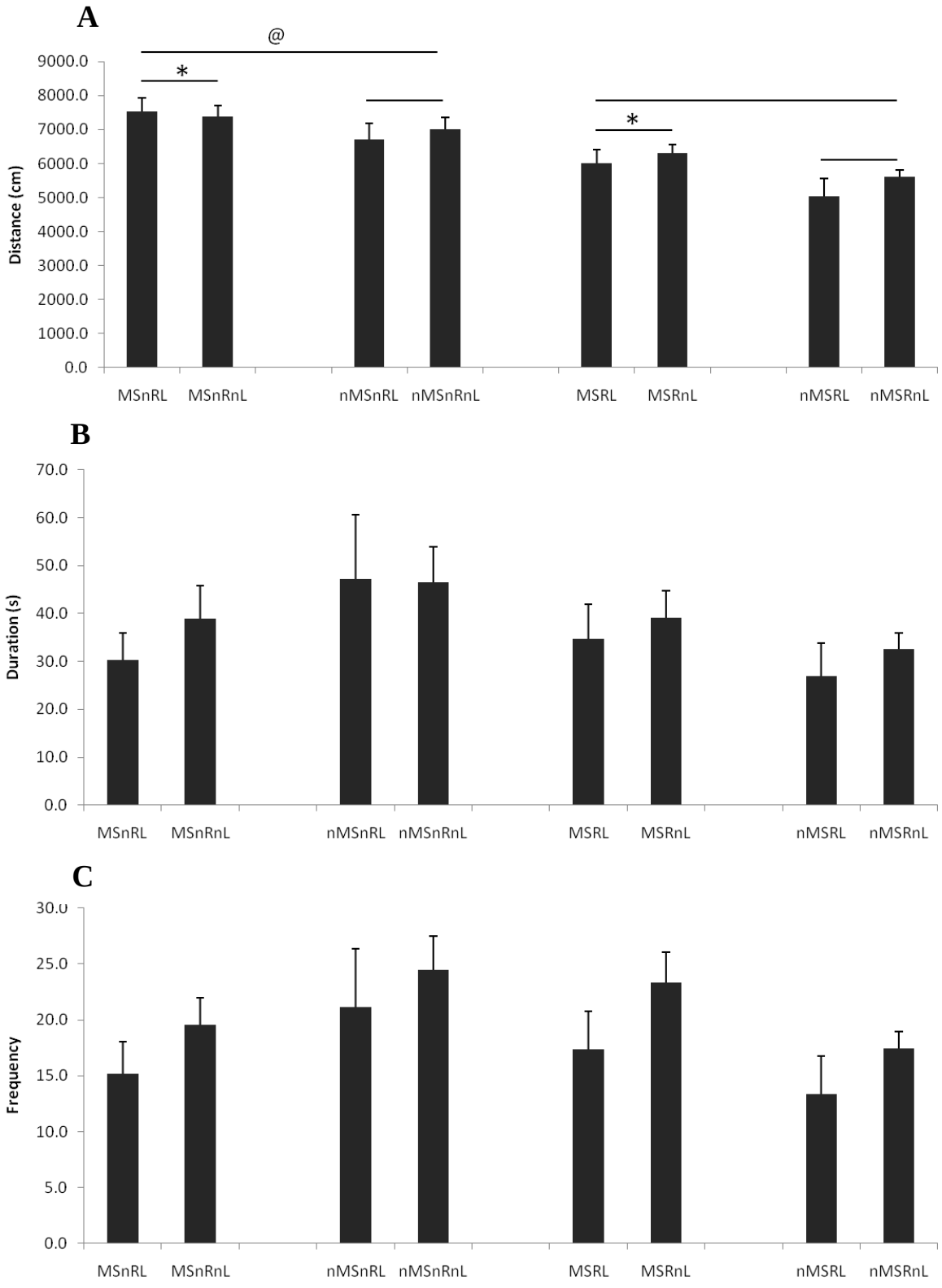

Figure 2.5 *Analysis of ten minutes in the open field on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: MS > nMS *p<0.01; nR > R $^{@}$p<0.001. B) Duration in the inner zone: no significant effects. C) Frequency of entry into the inner zone: interaction of MS and R (p<0.05).*

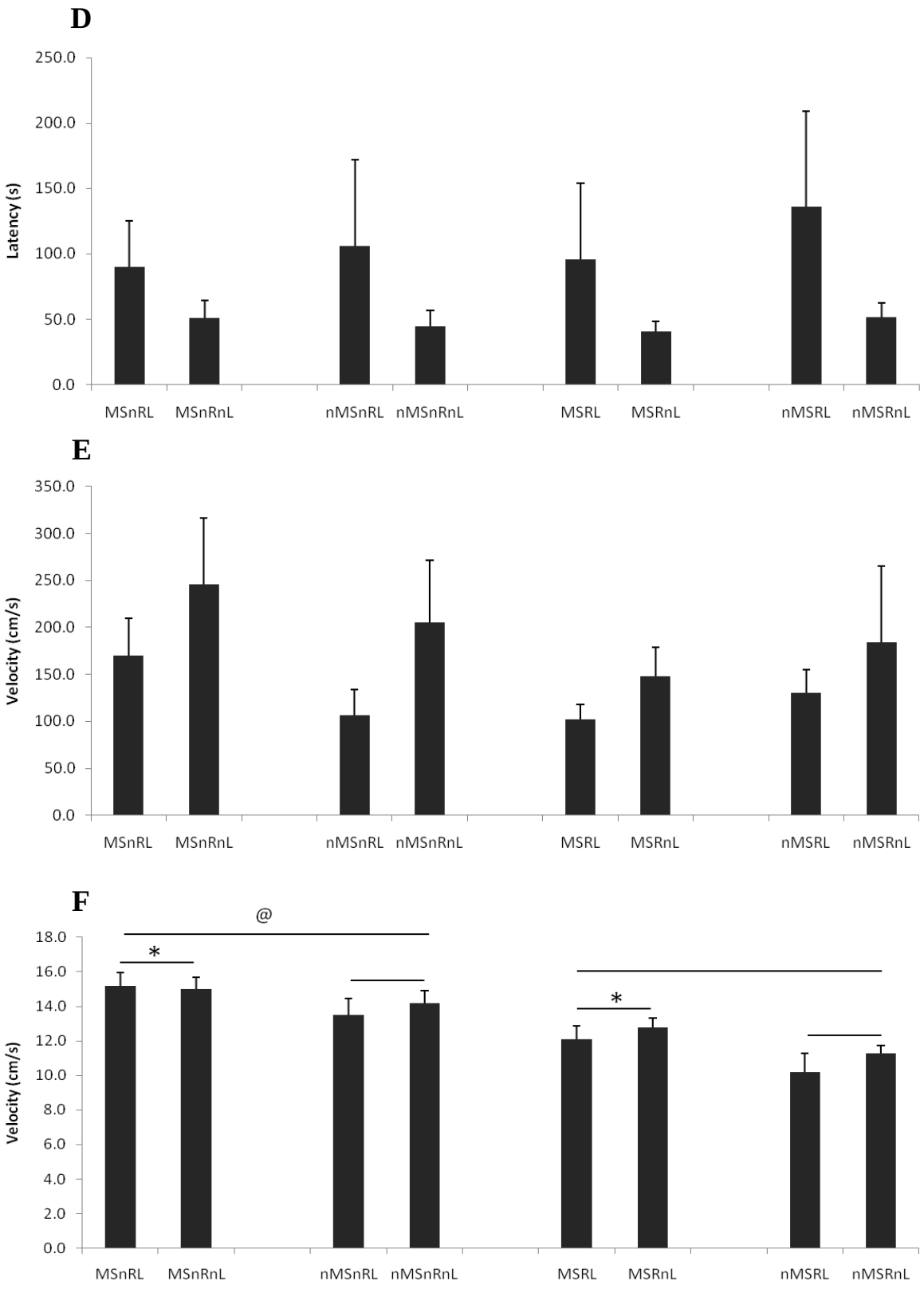

*Figure 2.5 cont. D) Latency to enter the inner zone: no significant effects. E) Maximum velocity: no significant effects. F) Mean velocity: MS > nMS *p<0.01; nR > R $^{@}$p<0.001. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

e) Maximum Velocity in the Open Field

No significant differences were observed for any treatment condition for maximum velocity travelled in the open field. *See Fig. 2.5E.*

f) Mean Velocity in the Open Field

A significant effect of MS was observed for mean velocity in the open field ($F_{1,54}$ = 7.434, p = 0.009). Post hoc analysis showed that rats subjected to MS had a greater mean velocity than non-separated rats. A significant effect of exercise was also observed ($F_{1,54}$ = 28.554, p = 0.000), and post hoc analysis showed that runners moved with a significantly lower mean velocity than non-runners. *See Fig. 2.5F.*

2.2.2.2.1.2 Five Minute Time-bins

a) First Five Minutes

A significant effect of MS was observed for distance travelled in the first five minutes ($F_{1,54}$ = 4.809, p = 0.033) with MS rats moving a significantly greater distance than non-separated rats. A significant effect of exercise was also observed, with runners moving a significantly shorter distance than non-runners ($F_{1,54}$ = 12.484, p = 0.001). *See Fig. 2.6A.*

No effect was observed for duration in the inner zone in the first five minutes. *See Fig. 2.6B.*

There was a significant interaction between MS and exercise for frequency of entry into the inner zone ($F_{1,54}$ = 4.333, p = 0.042). Post hoc analysis revealed no individual differences, but the pattern was for exercise to reduce frequency of entry into the inner zone in non-MS rats, and increase frequency in MS rats. *See Fig. 2.7B.*

No effect was observed for maximum velocity in the first five minutes. *See Fig. 2.8A.*

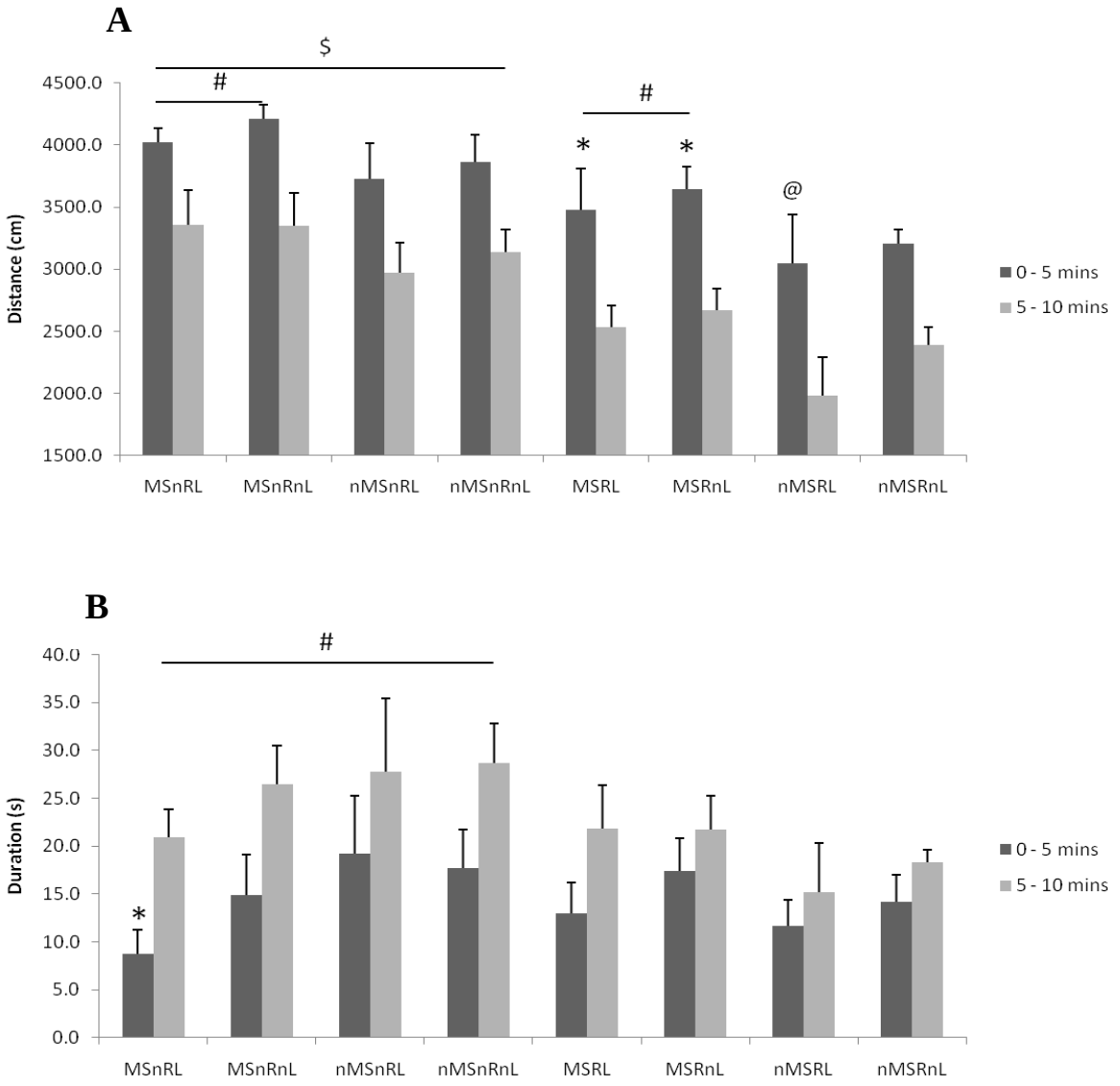

Figure 2.6 *Analysis of two consecutive five minute intervals in the open field on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: 1st interval > 2nd interval (p<0.001): *p<0.05; @p<0.01. MS > nMS: #p < 0.05 (1st and 2nd intervals); nR > R: $p<0.001 (1st and 2nd intervals). B) Duration in the inner zone: 1st interval < 2nd interval (p<0.001): *p<0.05. nR > R, #p<0.05 (2nd interval only). Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

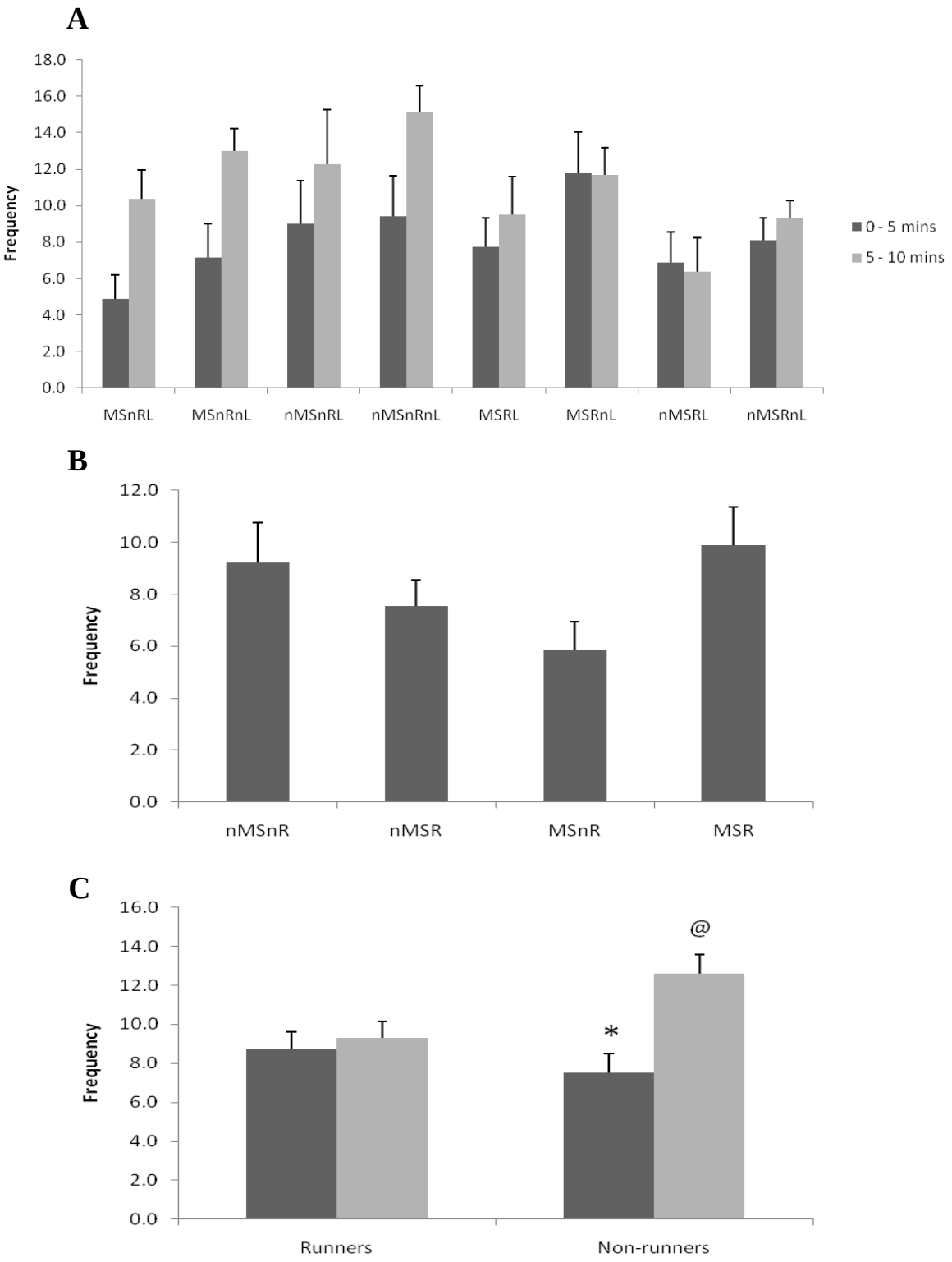

Figure 2.7 *Frequency of entry into the inner zone in consecutive five minute intervals in the open field on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Comparison of 1st and 2nd intervals. B) Interval 1: data collapsed across lesion status to show interaction between MS and R ($p<0.05$). C) Comparison of R and nR: 1st interval < 2nd interval *$p<0.001$; nR > R @$p<0.05$. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

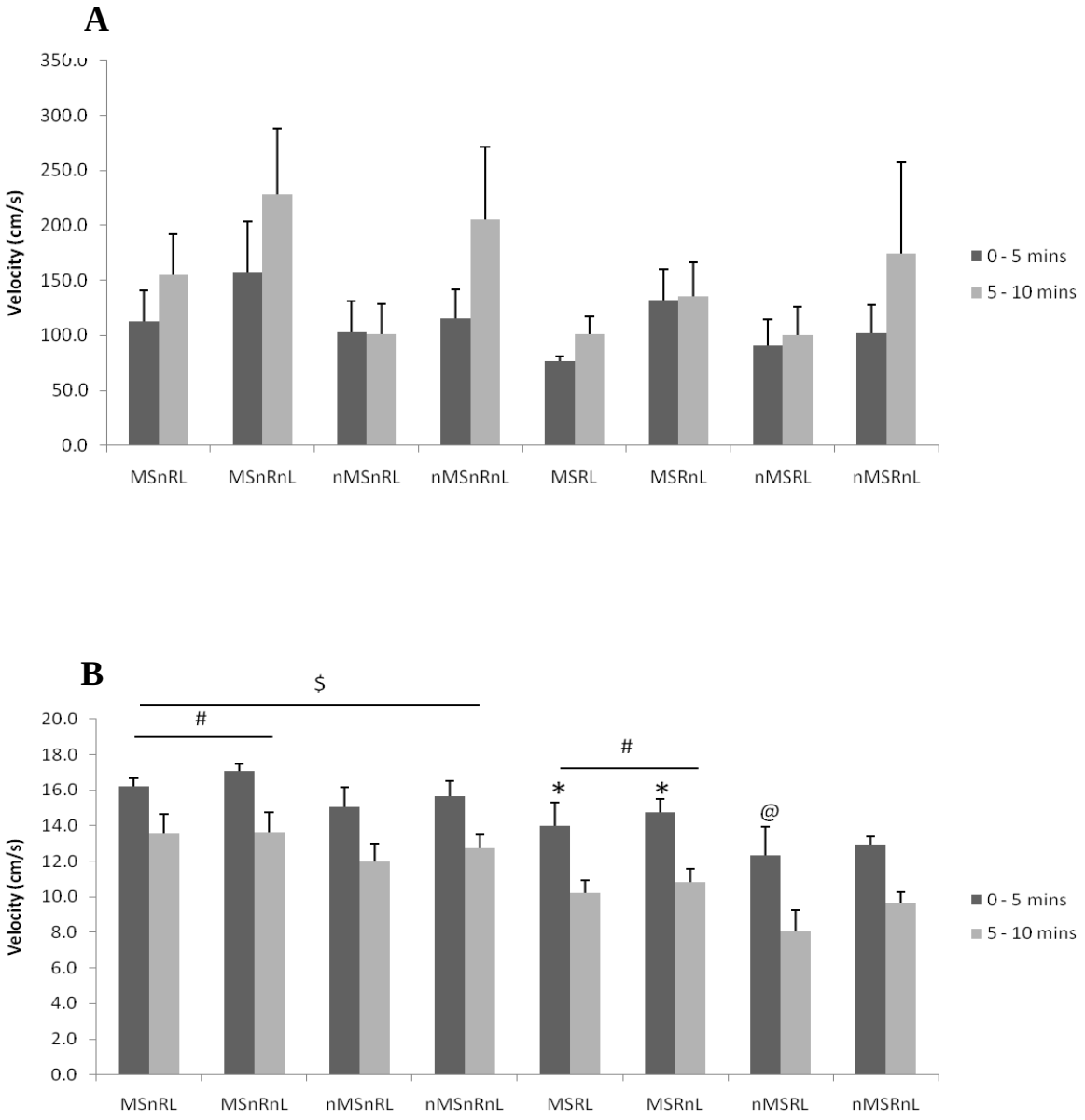

Figure 2.8 *Analysis of two consecutive five minute intervals in the open field on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Maximum velocity: 1st interval > 2nd interval ($p<0.01$); nL > L, $p<0.05$ (second interval only). B) Mean velocity: 1st interval > 2nd interval ($p<0.001$): *$p<0.05$; @$p<0.01$; MS > nMS: #$p<0.05$ (1st and 2nd intervals); nR > R: $$p<0.001$ (1st and 2nd intervals). Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

A significant effect of MS was observed for mean velocity in the first five minutes ($F_{1,54}$ = 4.883, p = 0.031) with MS rats moving with a significantly greater mean velocity than non-MS rats. A significant effect of exercise was also observed ($F_{1,54}$ = 12.941, p = 0.001) with runners moving with a significantly lower mean velocity than non-runners. *See Fig. 2.8B.*

b) Second Five Minutes

A significant effect of MS was observed for distance travelled in the second five minute period ($F_{1,54}$ = 4.955, p = 0.030) and post hoc analysis showed that MS rats moved a significantly greater distance than non-MS rats. Runners were shown to have covered a significantly shorter distance than non-runners ($F_{1,54}$ = 25.546, p = 0.000). *See Fig. 2.6A.*

An effect of exercise was observed for duration in the inner zone in the second five minutes in the open field ($F_{1,54}$ = 4.657, p = 0.035); post hoc analysis showed that runners spent significantly less time in the inner zone than non-runners. *See Fig. 2.6B.*

A significant effect of exercise was observed for frequency of entry into the inner zone in the second five minutes ($F_{1,54}$ = 7.573, p = 0.008) with post hoc analysis showing that runners entered the inner zone significantly less frequently than non-runners. A lesion effect was also observed for frequency of entry ($F_{1,54}$ = 4.392, p = 0.041); lesioned rats entered the inner zone significantly less frequently than non-lesioned rats. *See Fig. 2.6C.*

An effect of lesion was observed for maximum velocity ($F_{1,54}$ = 4.147, p = 0.047); lesioned rats had a significantly lower maximum velocity than non-lesioned rats. *See Fig 2.8A.*

A significant effect of MS was observed for mean velocity in the second five minutes ($F_{1,54}$ = 4.794, p = 0.033). MS rats were shown by post hoc analysis to move with a significantly greater mean velocity than non-MS rats. An effect of exercise was also observed ($F_{1,54}$ =

24.886, p = 0.000) with runners moving a significantly lower mean velocity than non-runners. *See Fig 2.8B.*

c) Comparison of the Two Five Minute Intervals

Repeated measures ANOVA showed a significant effect of time on distance travelled in the open field ($F_{1,54}$ = 69.009, p = 0.000). Post hoc analysis showed that a significantly shorter distance was covered in the second five minutes than in the first. The following individual groups moved significantly less in the second interval than in the first: nMSRL (p = 0.0071); MSRnL (p = 0.035); MSRL (p = 0.045). *See Fig. 2.6A.*

A significant effect of time on inner zone duration was observed ($F_{1,54}$ = 41.443, p = 0.000). Duration in the inner zone was significantly greater in the second five minutes than in the first. An interaction between time and exercise was also observed ($F_{1,54}$ = 5.045, p = 0.029). Post hoc analysis showed that while both runners and non-runners increased their duration in the inner zone in the second interval as compared to the first, the increase was less for the runners than for the non-runners. MSnRL was the only individual group that showed an increase in duration (p = 0.039). *See Fig. 2.6B.*

A significant effect of time was observed for frequency of entry into the inner zone ($F_{1,54}$ = 19.575, p = 0.000), and post hoc analysis revealed that frequency of entry was greater in the second interval than in the first. There was also an interaction between time and exercise ($F_{1,54}$ = 12.274, p = 0.000); non-runners significantly increased their frequency of entry into the inner zone in the second five minute interval (p = 0.000), while this was not observed for runners. *See Fig. 2.7A,C.*

A significant effect of time was observed on maximum velocity in the open field ($F_{1,54}$ = 8.433, p = 0.005). Post hoc analysis showed that maximum velocity was significantly greater in the second five minute interval than in the first. *See Fig 2.8A.*

A significant effect of time was observed on mean velocity in the open field ($F_{1,54}$ = 69.031, p = 0.000). Post hoc analysis showed that mean velocity was significantly lower in the second time interval than in the first. *See Fig 2.8B.*

2.2.2.2.1.3 One Minute Time-bins

a) Interval 1

Runners travelled a significantly shorter distance than non-runners ($F_{1,54}$ = 5.186, p = 0.027). Runners also had a significantly lower mean velocity than non-runners ($F_{1,54}$ = 5.465, p = 0.023).

b) Interval 2

MS rats spent significantly less time in the inner zone than non-MS rats ($F_{1,54}$ = 5.759, 0.020).

c) Interval 3

There were no significant differences in this time interval for the parameters analysed.

d) Interval 4

MS rats travelled a significantly greater distance than non-MS rats ($F_{1,54}$ = 7.343, p = 0.009), while runners travelled a significantly shorter distance than non-runners ($F_{1,54}$ = 10.654, p = 0.002). MS rats had a significantly greater mean velocity than non-MS rats ($F_{1,54}$ = 7.520, p = 0.008) and runners had a significantly lower mean velocity than non-runners ($F_{1,54}$ = 11.151, p = 0.002).

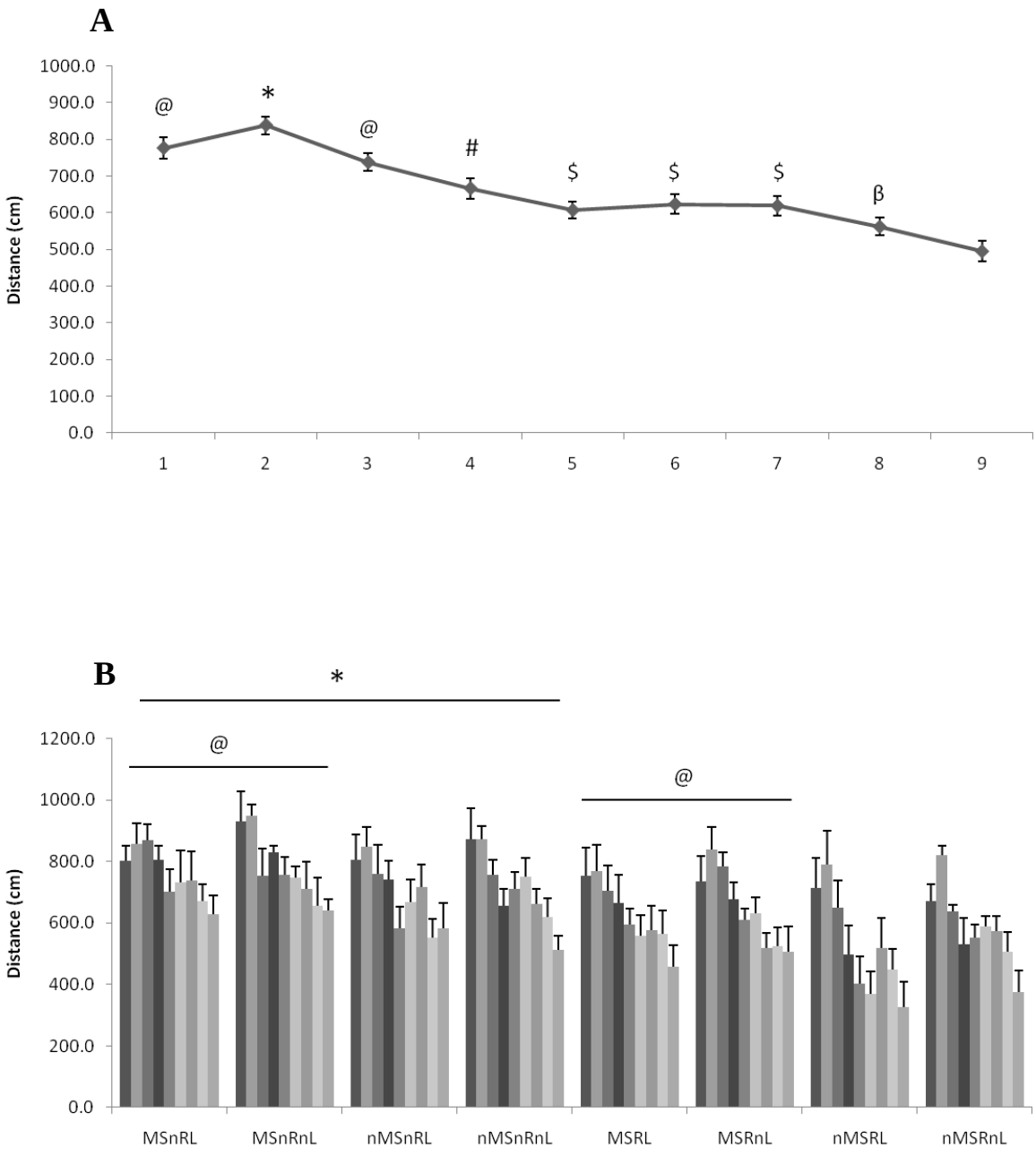

Figure 2.9 *Distance travelled in the open field in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time; interval > all other intervals *p<0.05; Interval > intervals 4 – 9 $^{@}$p<0.05; Interval > intervals 8, 9 $^{\#}$p<0.01; Interval > interval 9, $^{\$}$p<0.001; $^{\beta}$p<0.05. B) Intervals shown for all groups separately; MS > nMS $^{@}$p<0.05 (5th, 9th intervals), p<0.01 (4th interval); nR > R *p<0.05 (1st interval), p<0.01 (4th, 5th, 7th,8th, 9th intervals), p<0.001 (6th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

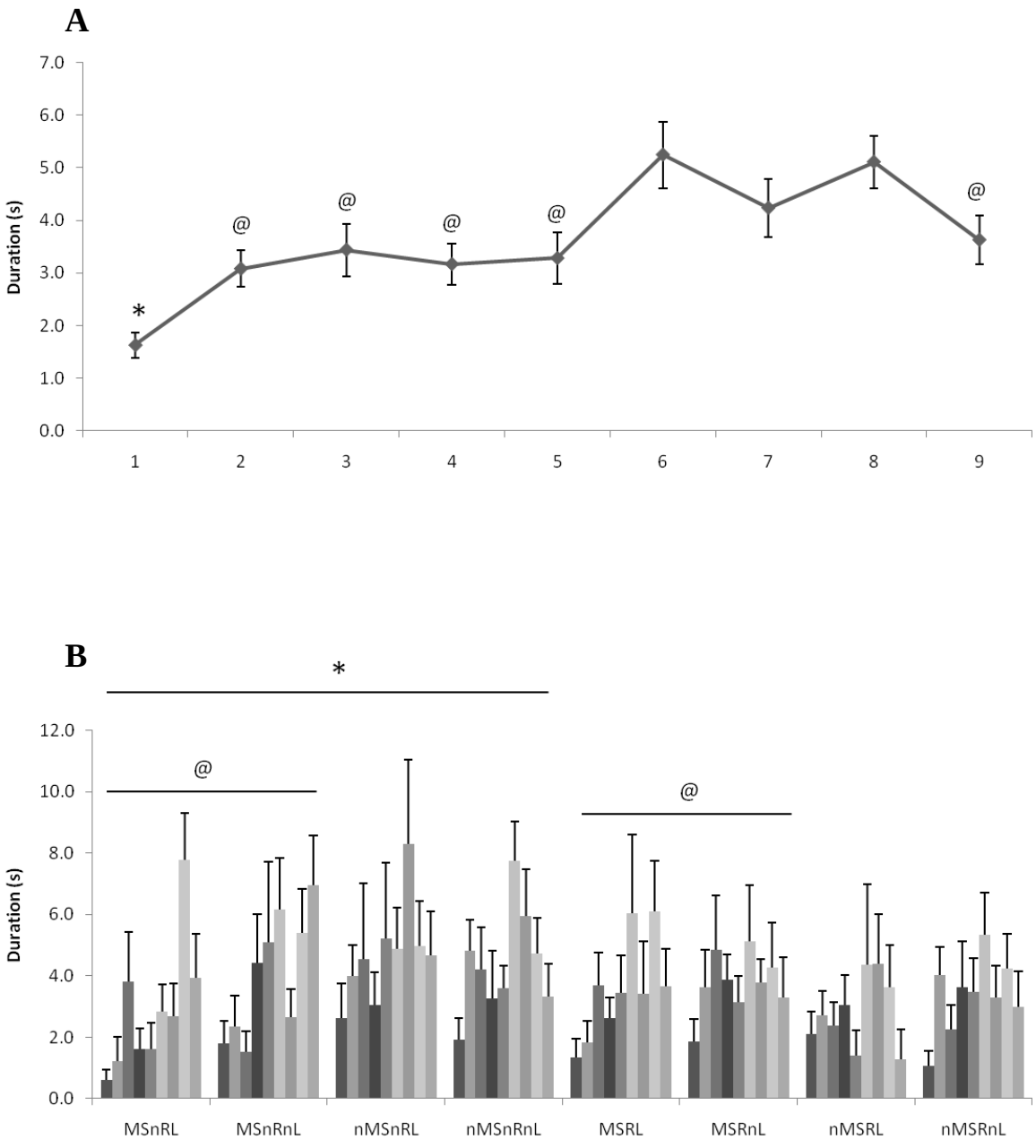

Figure 2.10 *Duration in the inner zone of the open field in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time; interval < all successive intervals *p<0.05; interval< intervals 6, 8, $^{@}$p<0.05. B) Intervals shown for all groups separately; MS < nMS $^{@}$p<0.05 (2nd, 7th intervals); nR > R *p<0.05 (9th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

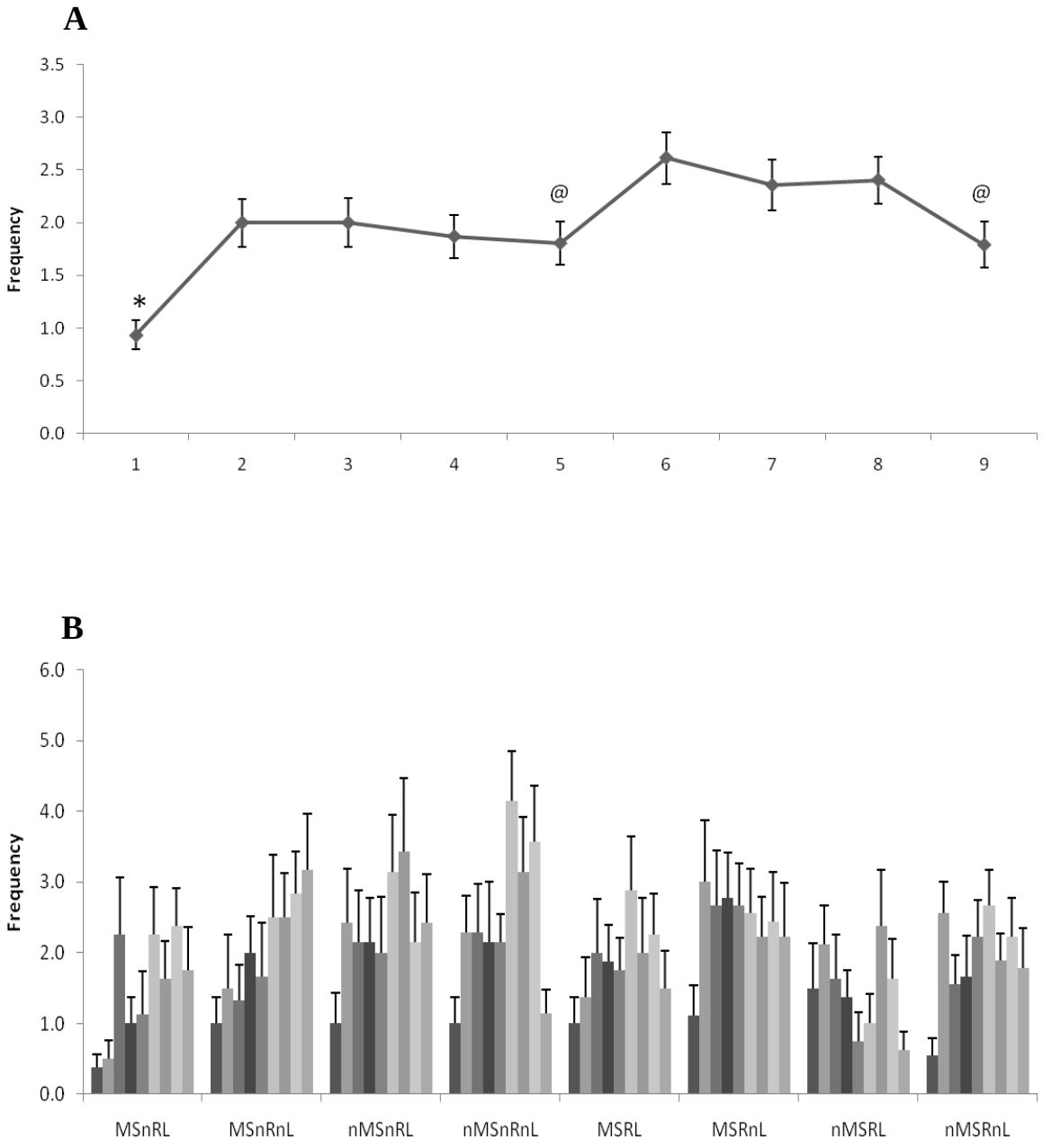

Figure 2.11 *Frequency of entry into the inner zone of the open field in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time; interval > all successive intervals *p<0.01; interval < interval 6, $^{@}p<0.05$. B) Intervals shown for all groups separately; interaction between MS and R p<0.05 (6^{th} interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

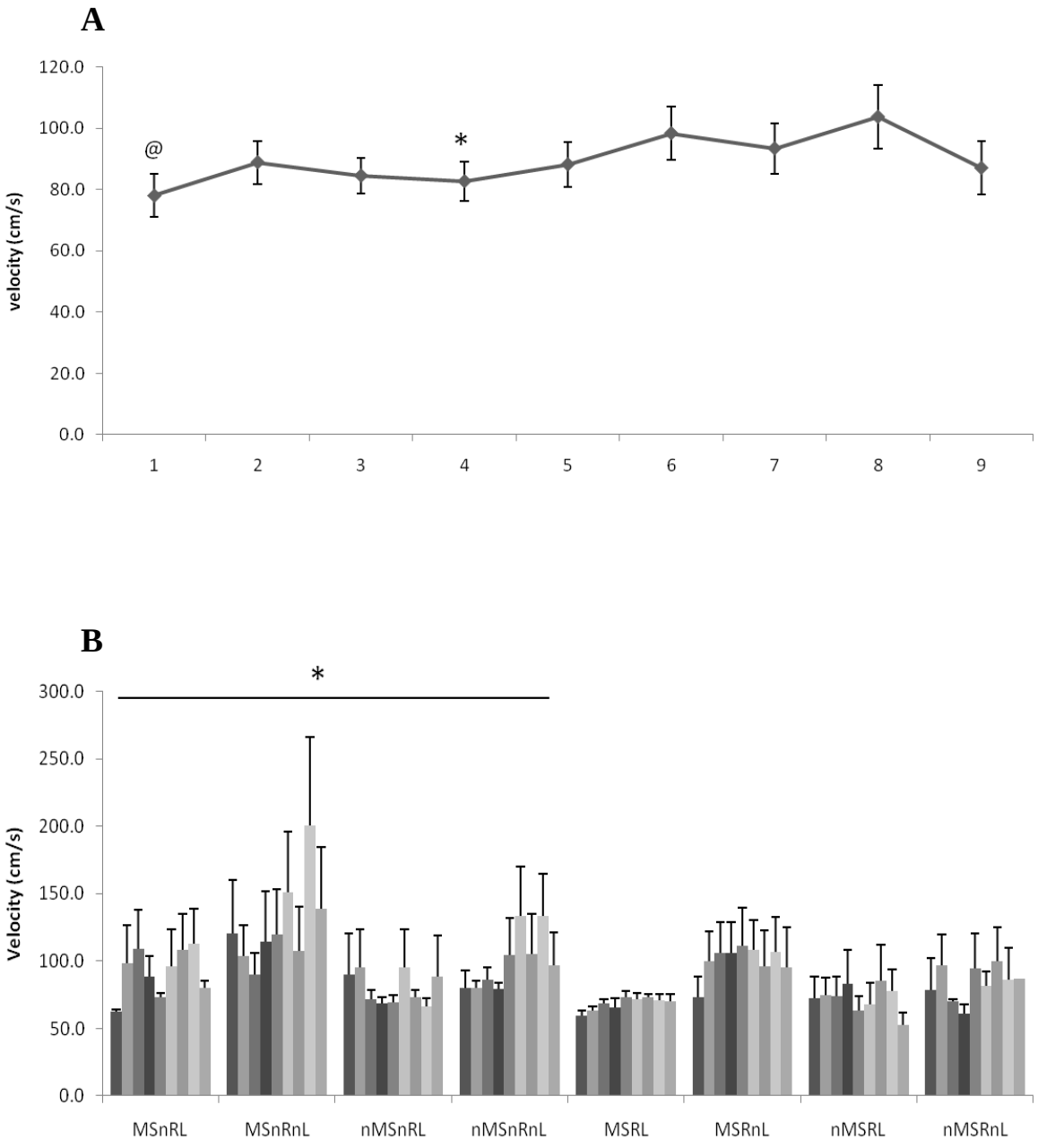

Figure 2.12 *Maximum velocity in the open field in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time; interval < interval 8 *p<0.05; $^{@}$p<0.01. B) Intervals shown for all groups separately; nR > R *p<0.05 (6th, 8th intervals); L <nL, p<0.05 (5th, 6th, 8th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

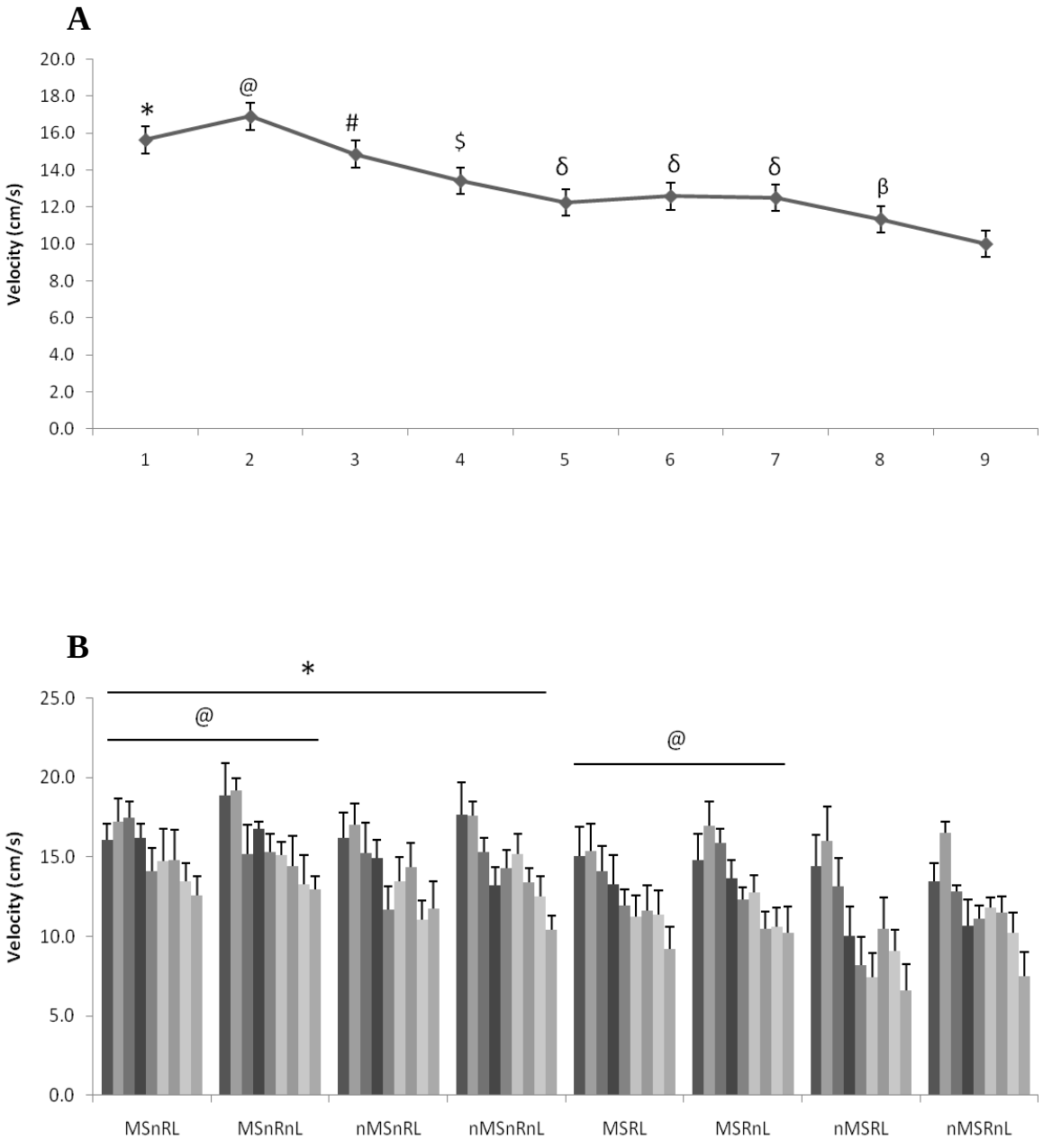

Figure 2.13 *Mean velocity in the open field in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time; interval > all other intervals $^{@}p<0.05$; Interval > intervals 4-9 $^{\#}p<0.05$, $*p<0.001$; interval > intervals 8,9 $^{\$}p<0.01$; interval > interval 9 $^{\beta}p<0.05$, $^{\delta}p<0.001$. B) Intervals shown for all groups separately; MS > nMS $^{@}p<0.05$ (5^{th}, 9^{th} intervals), $p<0.01$ (4^{th} interval); nR > R $*p<0.05$ (1^{st}, 8^{th} intervals), $p<0.01$ (4^{th}, 5^{th}, 7^{th}, 9^{th} intervals), $p<0.001$ (6^{th} interval); L < nL, $p<0.05$ (5^{th}, 6^{th} intervals). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

e) Interval 5

MS rats travelled a significantly greater distance than non-MS rats ($F_{1,54} = 5.879$, $p = 0.019$); runners travelled a significantly shorter distance than non-runners ($F_{1,54} = 11.548$, $p = 0.001$); lesioned rats travelled a significantly shorter distance than non-lesioned rats ($F_{1,54} = 4.040$, $p = 0.049$). Lesioned rats displayed a significantly lower maximum velocity than non-lesioned rats ($F_{1,54} = 6.461$, $p = 0.014$). MS rats had a significantly greater mean velocity than non-MS rats ($F_{1,54} = 5.949$, $p = 0.018$); runners had a significantly lower mean velocity than non-runners ($F_{1,54} = 11.678$, $p = 0.001$); and lesioned rats had a significantly lower mean velocity than non-lesioned rats ($F_{1,54} = 4.217$, $p = 0.045$).

f) Interval 6

Runners travelled a significantly shorter distance than non-runners ($F_{1,54} = 15.625$, $p = 0.000$), while lesioned rats travelled a significantly shorter distance than non-lesioned rats ($F_{1,54} = 4.238$, $p = 0.044$). An interaction was observed between MS and exercise for frequency of entry into the inner zone ($F_{1,54} = 5.119$, $p = 0.028$); post hoc analysis revealed no significant individual group differences, but a trend was observed for exercise to reduce frequency in non-MS rats, while slightly increasing it in MS rats. Runners had a significantly lower maximum velocity than non-runners ($F_{1,54} = 4.367$, $p = 0.041$), and lesioned rats had a significantly lower maximum velocity than non-lesioned rats ($F_{1,54} = 4.151$, $p = 0.047$). Similarly, runners had a significantly lower mean velocity than non-runners ($F_{1,54} = 15.704$, $p = 0.000$), while lesioned rats had a significantly lower mean velocity than non-lesioned rats ($F_{1,54} = 4.374$, $p = 0.041$).

g) Interval 7

Runners covered a significantly shorter distance than non-runners ($F_{1,54}$ = 9.189, p = 0.004). MS rats spent a significantly shorter time in the inner zone than non-MS rats ($F_{1,54}$ = 4.811, p = 0.033). Runners had a significantly lower mean velocity than non-runners ($F_{1,54}$ = 9.074, p = 0.004).

h) Interval 8

Runners travelled a significantly shorter distance in the open field as compared to non-runners ($F_{1,54}$ = 5.567, p = 0.022). Runners also had a significantly lower maximum velocity than non-runners ($F_{1,54}$ = 4.781, p = 0.033), and lesioned rats had a significantly lower maximum velocity than non-lesioned rats ($F_{1,54}$ = 6.395, p = 0.014). Runners also displayed a significantly lower mean velocity than non-runners ($F_{1,54}$ = 5.638, p = 0.021).

i) Interval 9

MS rats travelled a significantly greater distance in the open field than non-MS rats ($F_{1,54}$ = 4.624, p = 0.036); runners travelled a significantly shorter distance than non-runners ($F_{1,54}$ = 11.859). Runners spent a significantly shorter time in the inner zone than non-runners ($F_{1,54}$ = 4.397, p = 0.041).

j) Comparison of One Minute Intervals

Repeated measures ANOVA showed a significant effect of time on distance travelled in the open field ($F_{432,8}$ = 24.065, p = 0.000). Post hoc analysis indicated that the distance travelled in interval 1 was significantly smaller than in interval 2 (p = 0.0436) and significantly greater than in all other intervals except for interval 3 (p < 0.01 in each case); distance travelled in interval 2 was greater than that in all other intervals (p < 0.05 in each case); distance travelled in interval 3 was greater than in that in intervals 4 to 9 (p < 0.05 in each case); distance travelled in interval 4 was greater than that in intervals 8 and 9 (p < 0.01 in each case);

distances travelled in intervals 5 to 8 were significantly greater than that in interval 9 ($p < 0.05$ in each cases). Significant individual group differences were as follows: nMSnRnL interval 1 > interval 9 ($p = 0.0452$); nMSnRnL interval 2 > interval 9 ($p = 0.0485$); nMSRnL interval 2 > interval 9 ($p = 0.000$); nMSRL interval 1 > interval 6 ($p = 0.045$) and interval 1 > interval 9 ($p = 0.007$); nMSRL interval 2 > interval 5 ($p = 0.012$), interval 2 > interval 6 ($p = 0.002$) and interval 2 > interval 9 ($p = 0.000$). *See Fig 2.9.*

A significant effect of time was observed on duration in the inner zone ($F_{432,8} = 7.072$, $p = 0.000$). Post hoc analysis showed that duration in interval 1 was less than in any other time interval ($p < 0.05$ in all cases); duration in interval 2 was less than in interval 6 ($p = 0.006$) and in interval 8 ($p = 0.011$); duration in interval 3 was less than in interval 6 ($p = 0.019$) and in interval 8 ($p = 0.024$); duration in interval 4 was less than in interval 6 ($p = 0.008$) and in interval 8 ($p = 0.013$); duration in interval 5 was less than in interval 6 ($p = 0.011$) and in interval 8 ($p = 0.017$); duration in interval 6 was greater than in interval 9 ($p = 0.031$); duration in interval 8 was greater than in interval 9 ($p = 0.032$). Only one individual group difference was observed: MSnRL interval 1 < interval 8 ($p = 0.033$). Repeated measures ANOVA also revealed a significant interaction between time and MS ($F_{432,8} = 2.171$, $p = 0.029$), with the tendency for MS rats to increase their duration in the inner zone over time, while non-separated rats peaked at around the fifth minute and then decreased. *See Fig 2.10.*

A significant effect of time was observed on the frequency of entry into the inner zone ($F_{432,8} = 6.905$, $p = 0.000$). Post hoc analysis indicated that frequency of entry in interval 1 was less than in any other interval ($p < 0.01$ in all cases); frequency of entry in interval 5 was less than in interval 6 ($p = 0.037$); frequency of entry in interval 6 was significantly greater than in interval 9 ($p = 0.039$). Only one individual group difference was observed: nMSnRnL interval 1 < interval 6 ($p = 0.038$). *See Fig 2.11.*

A significant effect of time was observed on maximum velocity in the open field ($F_{432,8}$ = 3.047, p = 0.002). Post hoc analysis indicated that maximum velocity in interval 8 was greater than in interval 1 (p = 0.006) and interval 4 (p = 0.0498). Individual group differences were as follows: MSnRnL interval 8 > all other intervals (p < 0.05 in all cases). Repeated measures ANOVA also revealed a significant interaction between time and lesion ($F_{432,8}$ = 3.047, p = 0.002). *See Fig 2.12.*

A significant effect of time was observed on mean velocity in the open field ($F_{432,8}$ = 24.053, p = 0.000). Post hoc analysis indicated that mean velocity in interval 1 was lower than in interval 2 (p = 0.041) and higher than in intervals 4 to 9 (p < 0.001 in all cases); mean velocity in interval 2 was higher than in all other intervals (p < 0.01 in all cases); mean velocity in interval 3 was higher than in intervals 4 to 9 (p < 0.05 in all cases); mean velocity in interval 4 was higher than in interval 8 (p = 0.007) and interval 9 (p = 0.000); mean velocity in interval 5 was higher than in interval 9 (p = 0.0009); mean velocity in interval 6 was higher than in interval 9 (p = 0.000); mean velocity in interval 7 was higher than in interval 9 (p = 0.000); mean velocity in interval 8 was higher than in interval 9 (p = 0.030). Individual group differences were as follows: nMSnRnL interval 1 > interval 9 (p = 0.041) and interval 2 > interval 9 (p = 0.047); nMSRnL interval 2 > interval 9 (p = 0.0006); nMSRL interval 1 > interval 6 (p = 0.045) and interval 1 > interval 9 (p = 0.007), interval 2 > interval 5 (p = 0.011), interval 2 > interval 6 (p = 0.002) and interval 2 > interval 9 (p = 0.000). *See Fig 2.13.*

2.2.2.2.2. P63

2.2.2.2.2.1 Full Ten Minutes

a) Distance moved

A significant effect of exercise was observed for distance moved in the open field ($F_{1,53}$ = 4.489, p = 0.039). Post hoc analysis showed that runners covered a significantly shorter distance than non-runners. *See Fig 2.14A.*

b) Duration in the inner zone

No significant effects were observed for duration in the inner zone of the open field. *See Fig 2.14B.*

c) Frequency of entry into the inner zone

No significant effects were observed for frequency of entry into the inner zone. *See Fig 2.14C.*

d) Latency of entry into the inner zone

No significant effects were observed for latency of entry into the inner zone. *See Fig 2.14D.*

e) Maximum velocity

No significant effects were observed for maximum velocity in the open field. *See Fig 2.14E.*

f) Mean velocity

A significant effect of exercise was observed for mean velocity in the open field ($F_{1,53}$ = 4.489, p = 0.039). Post hoc analysis showed that runners had a significantly lower mean velocity than non-runners. *See Fig 2.14F.*

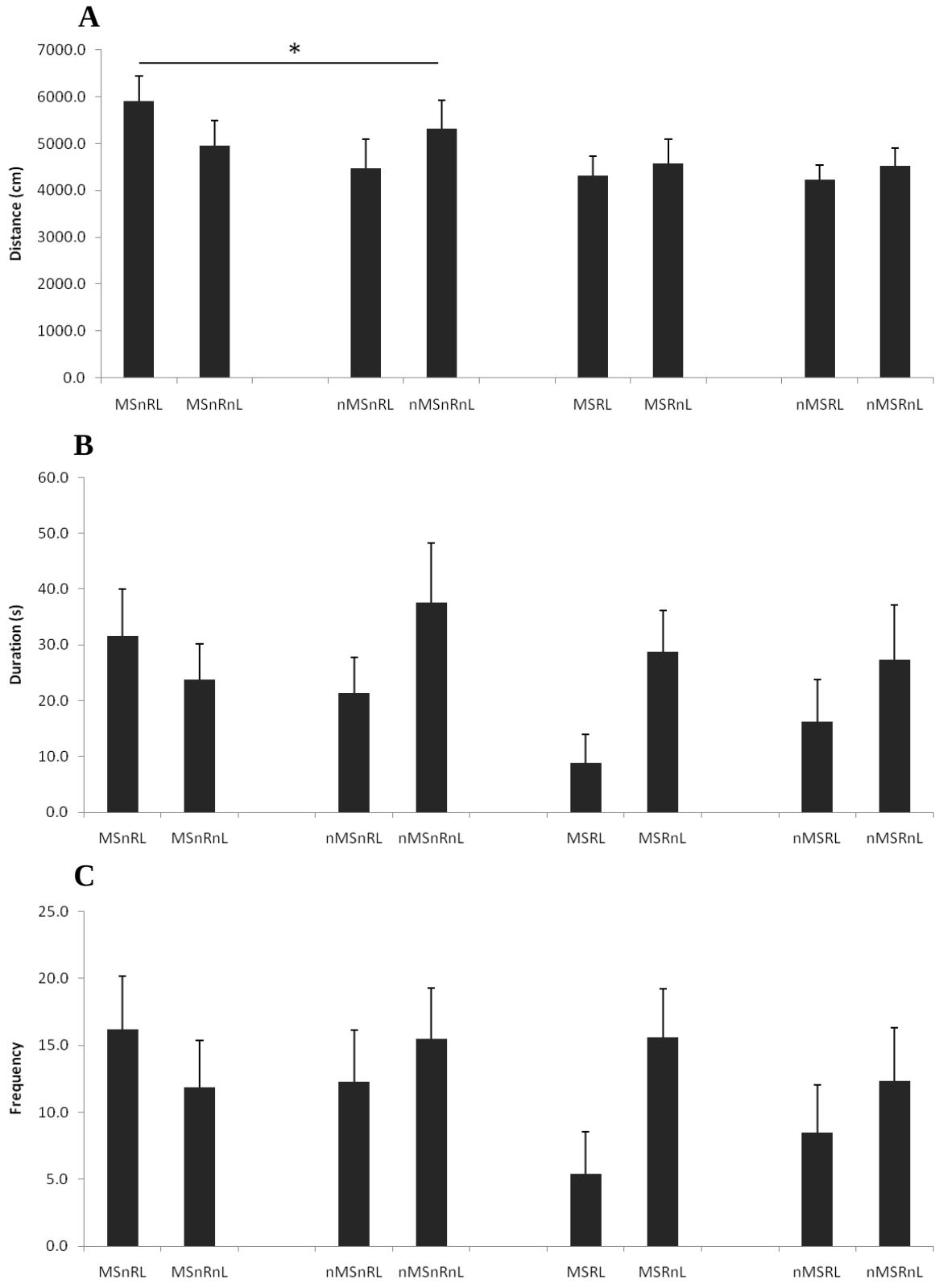

Figure 2.14 *Analysis of ten minutes in the open field on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: nR > R *p<0.05. B) Duration in the inner zone: no significant effects. C) Frequency of entry into the inner zone: no significant effects.*

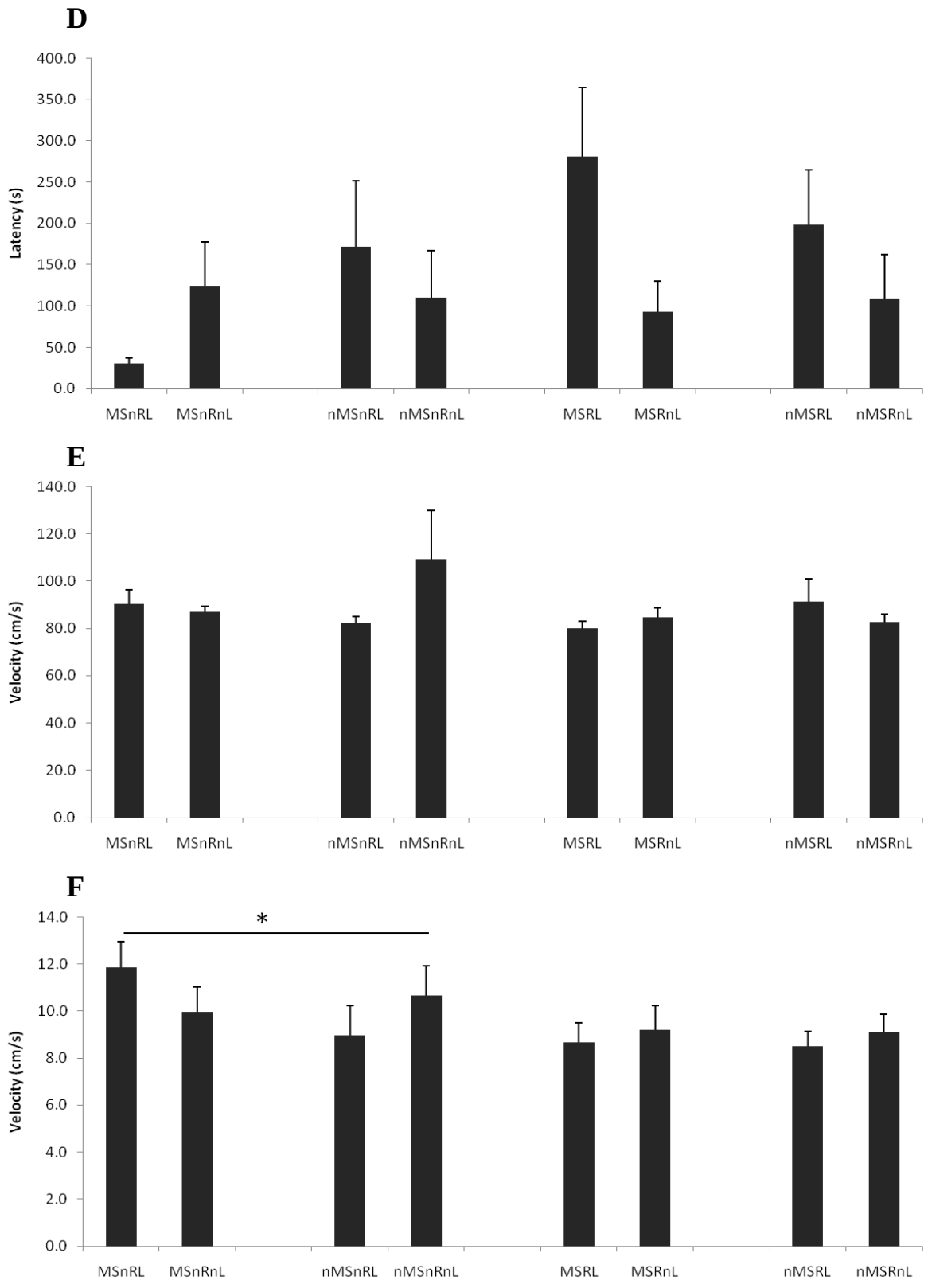

Figure 2.14 *cont. D) Latency to enter the inner zone: no significant effects. E) Maximum velocity: no significant effects. F) Mean velocity: nR > R *p<0.05. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

2.2.2.2.2.2 Five Minute Time-bins

a) First Five Minutes

No significant effects were observed in the first five minutes for any of the variables tested.

b) Second Five Minutes

A significant effect of exercise was observed for distance travelled ($F_{1,53} = 5.214$, $p = 0.026$) and post hoc analysis showed that runners travelled a significantly shorter distance than non-runners. *See Fig 2.15A.*

A significant effect of exercise was observed for duration in the inner zone ($F_{1,53} = 4.790$, $p = 0.033$). Post hoc analysis showed that runners spent a significantly shorter time period in the inner zone than non-runners. *See Fig 2.15B.*

A significant effect of exercise was observed for mean velocity ($F_{1,53} = 5.153$, $p = 0.027$). Post hoc analysis showed that runners had a significantly lower mean velocity than non-runners. *See Fig. 2.15E.*

c) Comparison of the two five minute intervals

Repeated measures ANOVA showed a significant effect of time on distance travelled in the open field ($F_{1,53} = 200.314$, $p = 0.000$). Post hoc analysis showed that a shorter distance was covered in the second five minute interval than in the first, and this was significant for all individual groups. *See Fig 2.15A.*

A significant effect of time was observed for frequency of entry into the inner zone ($F_{1,53} = 4.341$, $p = 0.042$). Post hoc analysis showed that fewer entries were made into the inner zone in the second five minutes. *See Fig 2.15C.*

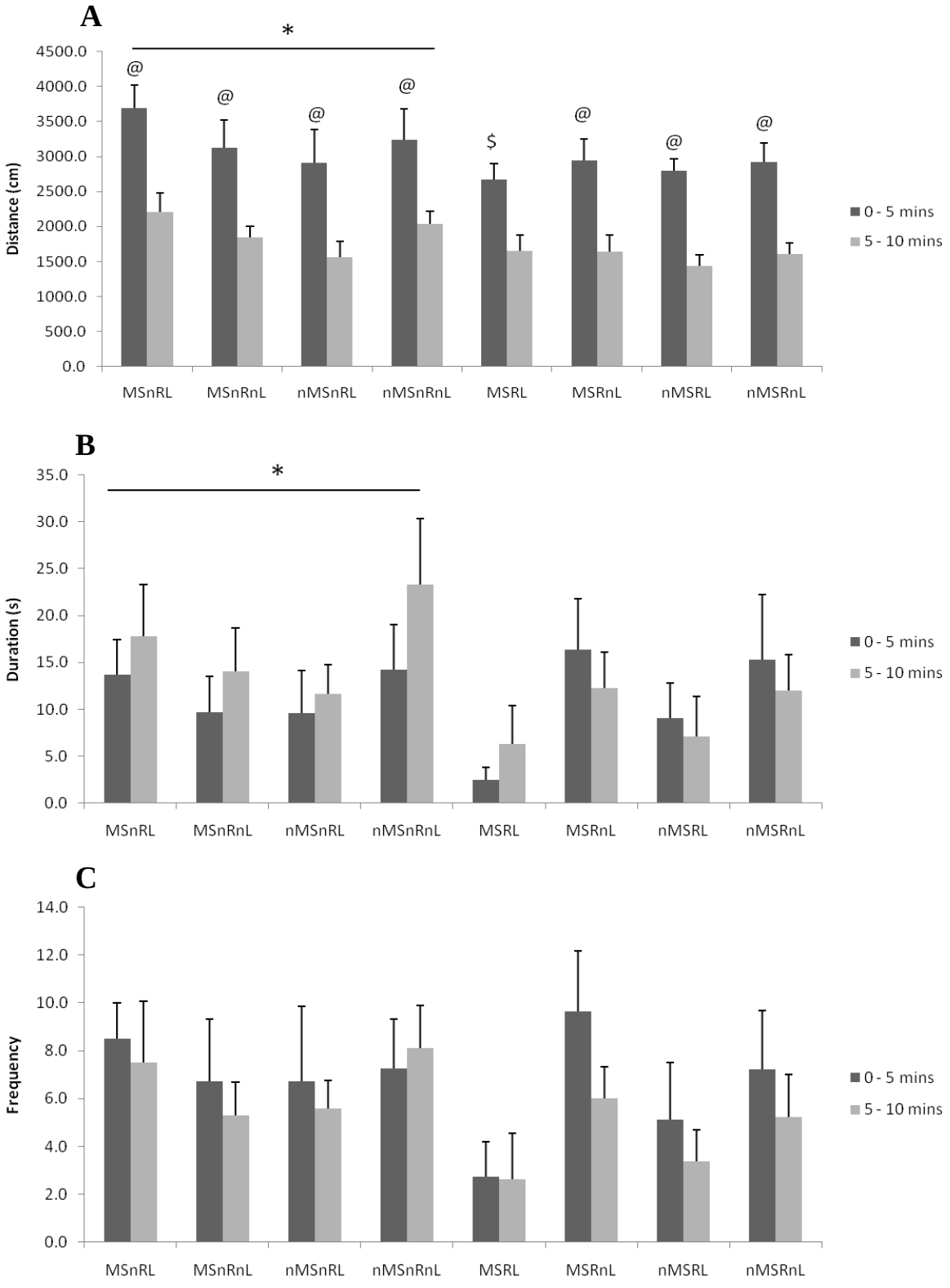

Figure 2.15 *Analysis of two consecutive five minute intervals in the open field on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: 1st interval > 2nd interval ($p<0.001$): $^{\$}p<0.01$; $^{@}p<0.001$; nR >R, *p < 0.05 (second interval only). B) Duration in the inner zone: nR > R*

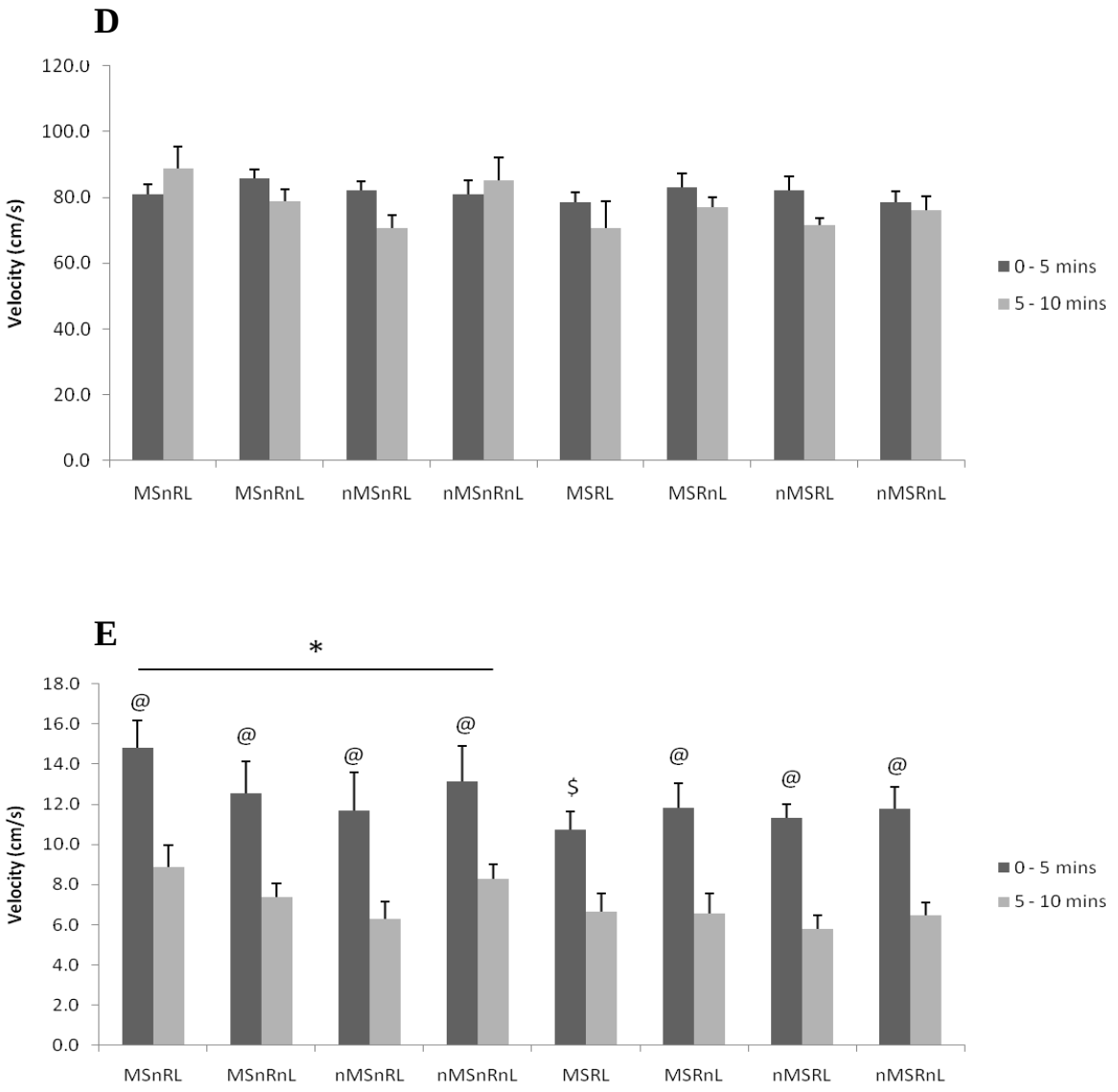

Figure 2.15 *cont. *p<0.05 (2nd interval only). C) Frequency of entry into the inner zone: 1st interval > 2nd interval (p<0.05). D) Maximum velocity: 1st interval > 2nd interval (p<0.05); interaction between time interval, MS and L (p<0.05). E) Mean velocity: 1st interval > 2nd interval (p<0.001): $p<0.01, @p<0.001; nR > R *p<0.01 (2nd interval only). Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

A significant effect of time was observed for maximum velocity ($F_{1,53}$ = 4.922, p = 0.031), and post hoc analysis showed that maximum velocity was lower in the second five minute interval. There was a significant interaction between Time, MS and lesion ($F_{1,53}$ = 6.148, p = 0.016), but post hoc analysis did not reveal any significant individual group differences: the tendency was for maximum velocity to increase in non-separated, non-lesioned rats, and decrease in all other groups, but the decrease in the MS, lesioned group was very slight compared to the other two groups. *See Fig 2.15D.*

A significant effect of time was observed on mean velocity ($F_{1,53}$ = 200.799, p = 0.000). Post hoc analysis showed that mean velocity was lower in the second five minute interval than in the first. This was significant for all individual groups. *See Fig 2.15E.*

2.2.2.2.2.3 One Minute Time-bins

a) Interval 1

A significant interaction between exercise and lesion was observed on frequency of entry into the inner zone ($F_{1,53}$ = 4.952, p = 0.030). Post hoc analysis showed no individual significant differences, but it was observed that in non-runners the lesion tended to increase entries while in runners the lesion decreased entries.

b) Interval 2

Runners travelled a significantly shorter distance than non-runners ($F_{1,53}$ = 4.301, p = 0.0430), and exhibited a significantly lower mean velocity than non-runners ($F_{1,53}$ = 4.301, p = 0.043).

c) Interval 3

There were no significant differences in this time interval for any of the parameters analysed.

d) Interval 4

There were no significant differences in this time interval for any of the parameters analysed.

e) Interval 5

A significant interaction was observed between MS, exercise and lesion for frequency of entry into the inner zone ($F_{1,53} = 4.627$, $p = 0.036$). No significant differences were observed on post-hoc analysis, but the tendency was for the lesion to increase frequency of entry in all non-runners and in non-separated runners, but to decrease frequency of entry in separated runners.

f) Interval 6

Runners travelled a significantly shorter distance than non-runners ($F_{1,53} = 4.149$, $p = 0.047$). There was also a significant interaction between MS and lesion ($F_{1,53} = 6.746$, $p = 0.012$), with MS significantly increasing distance travelled by lesioned rats. Runners spent a significantly shorter time in the inner zone than non-runners ($F_{1,53} = 4.490$, $p = 0.039$) and lesioned rats spent a significantly shorter time in the inner zone than non-lesioned rats ($F_{1,53} = 4.292$, $p = 0.043$). Runners had a significantly lower mean velocity than non-runners ($F_{1,53} = 4.149$, $p = 0.047$), and there was a significant interaction of MS and lesion on mean velocity ($F_{1,53} = 6.746$, $p = 0.012$), with MS significantly increasing mean velocity in lesioned rats.

g) Interval 7

There were no significant differences in this time interval for any of the parameters analysed.

h) Interval 8

There were no significant differences in this time interval for any of the parameters analysed.

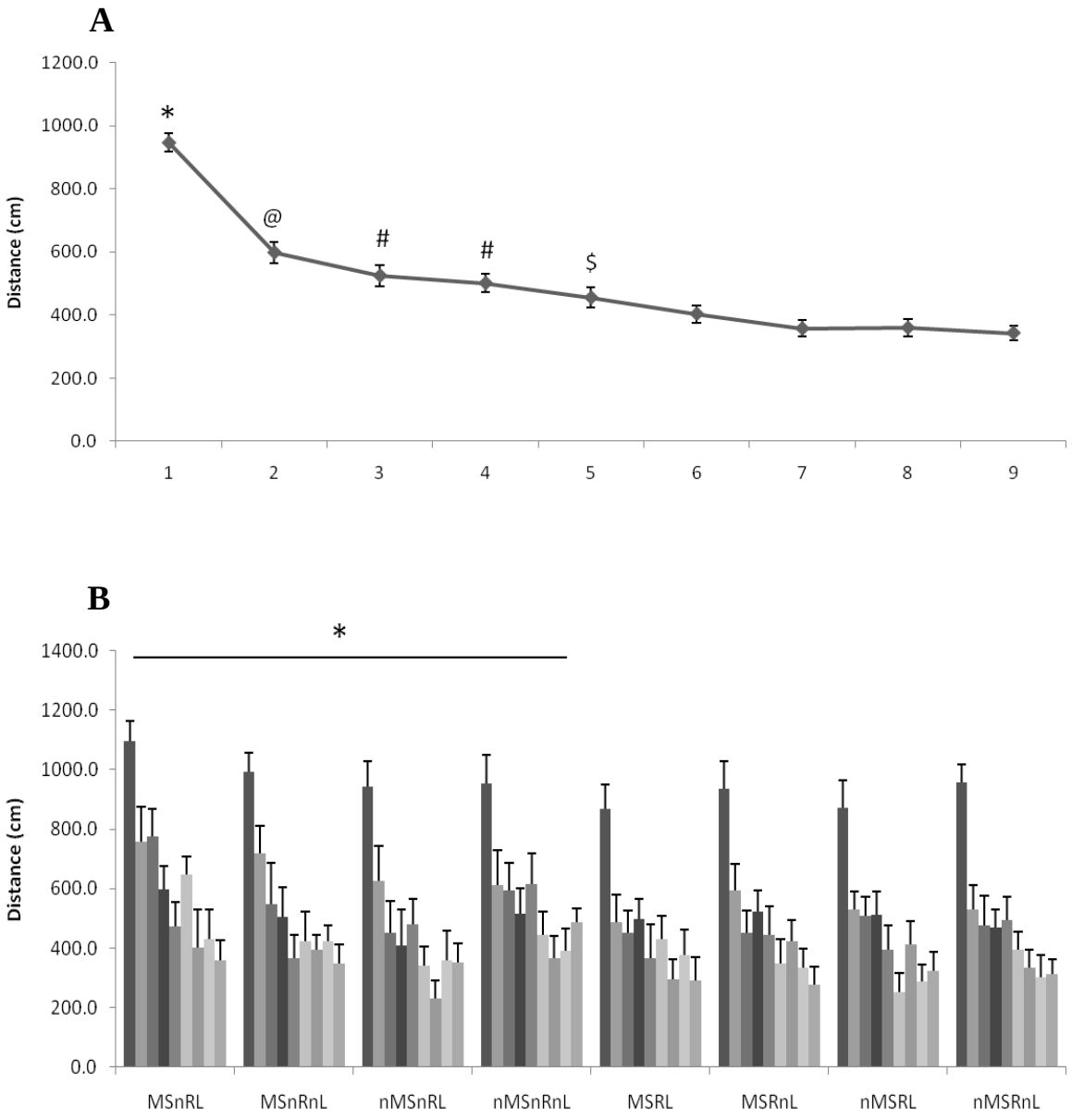

Figure 2.16 *Distance travelled in the open field in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: Interval > all successive intervals *p<0.001; $^{@}$p<0.05; Interval > intervals 6 – 9 only, $^{\#}$p<0.01; Interval > intervals 7 – 9 only, $^{\$}$p<0.05. B) Intervals shown for all groups separately: nR > R *p<0.05 (2nd, 6th intervals); interaction between MS and L, p<0.05 (6th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

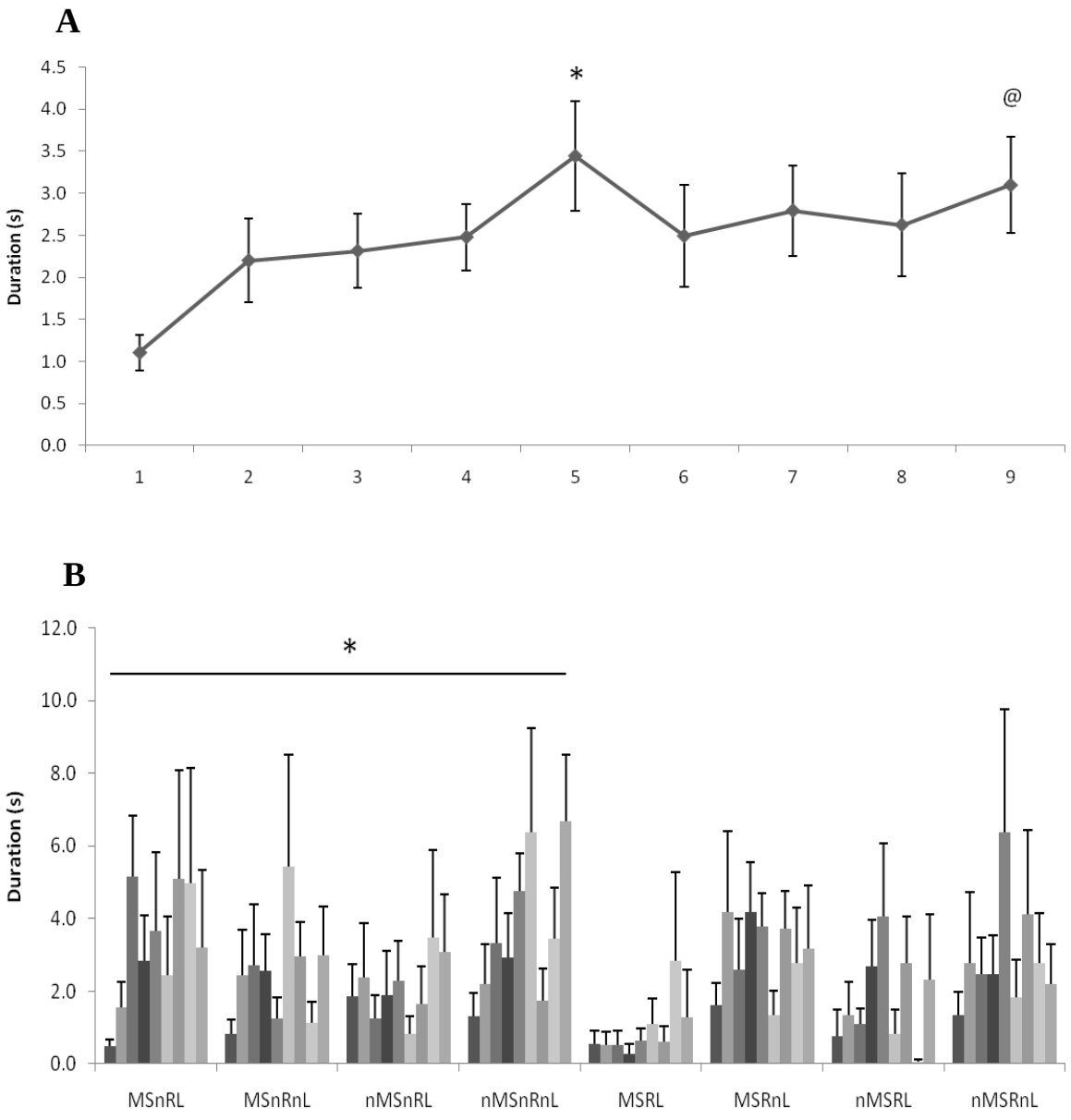

Figure 2.17 *Duration in the inner zone of the open field in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: Interval greater than interval 1,* $^{@}p<0.01$*; *p<0.05. B) Intervals shown for all groups separately: nR > R *p<0.05 (*6^{th} *interval); nL > L, p<0.05 (*6^{th} *interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

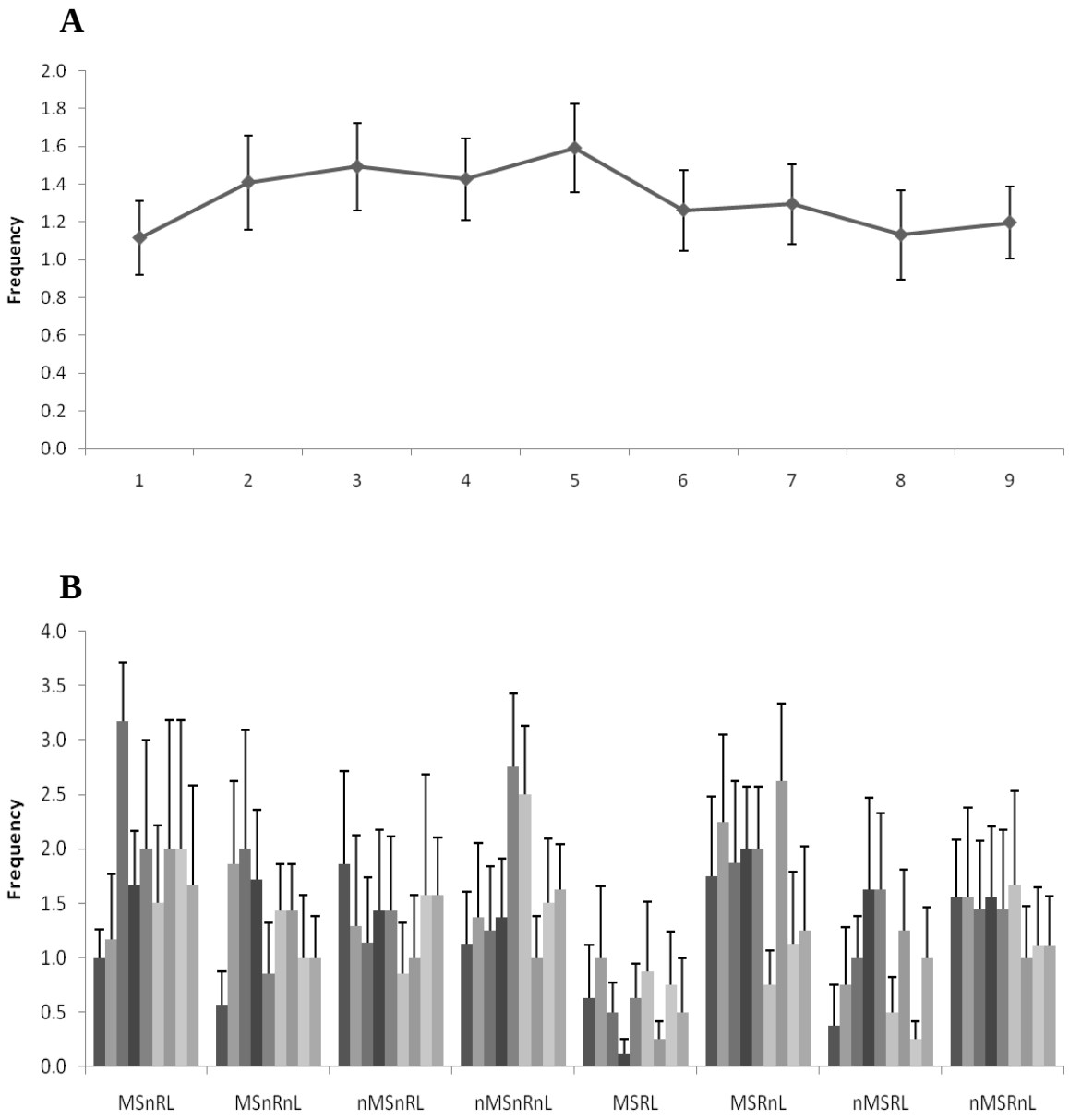

Figure 2.18 *Frequency of entry into the inner zone of the open field in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: no significant effects. B) Intervals shown for all groups separately: Interaction between R and L, $p<0.05$ (1^{st} interval); interaction between MS, R and L, $p<0.05$ (5^{th} interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

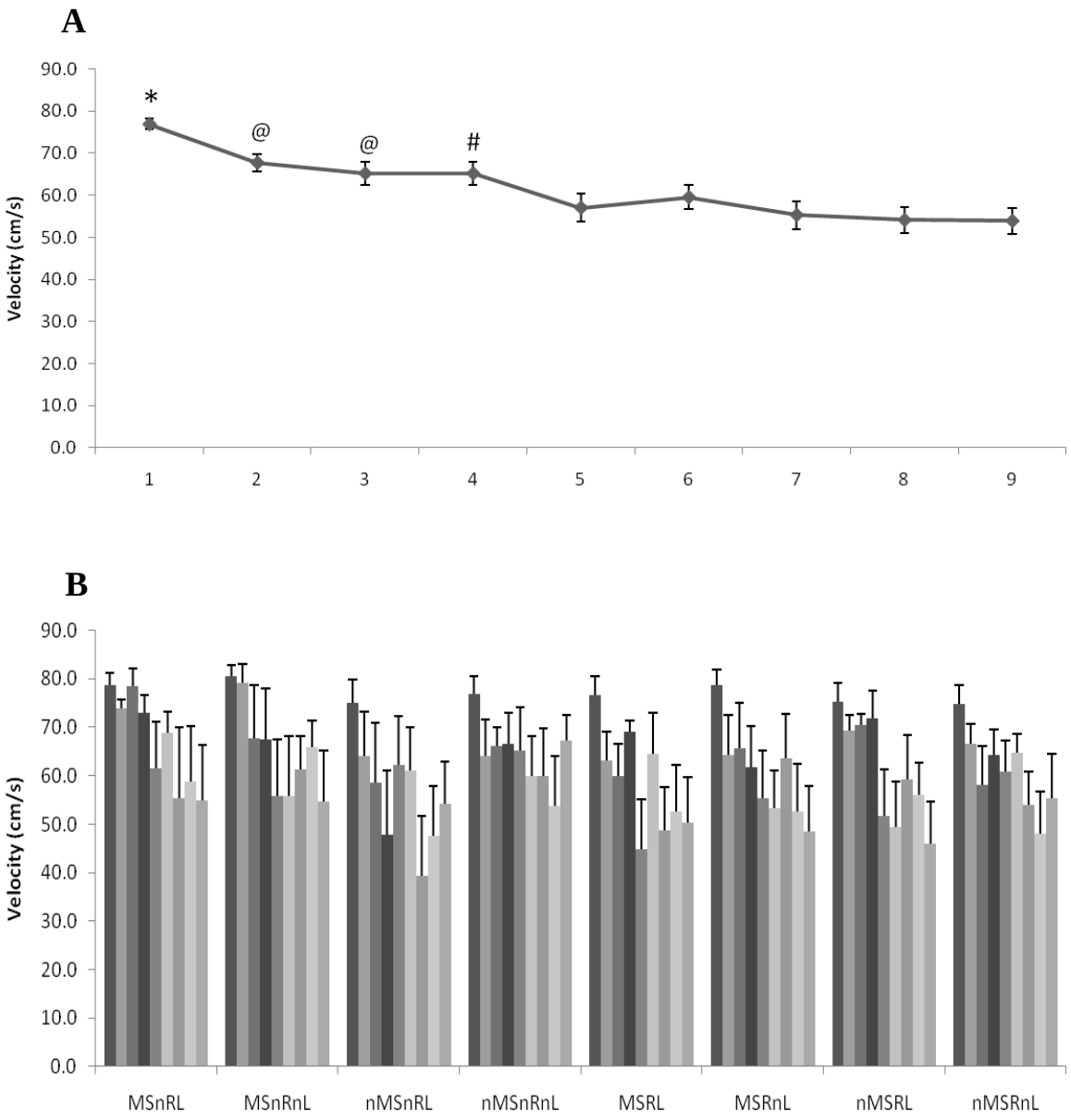

Figure 2.19 *Maximum velocity in the open field in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals *p<0.01; interval > intervals 5 and 7-9 $^{@}$p<0.05; interval > intervals 7-9 $^{\#}$p<0.05. B) Intervals shown for all groups separately: no significant effects. Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

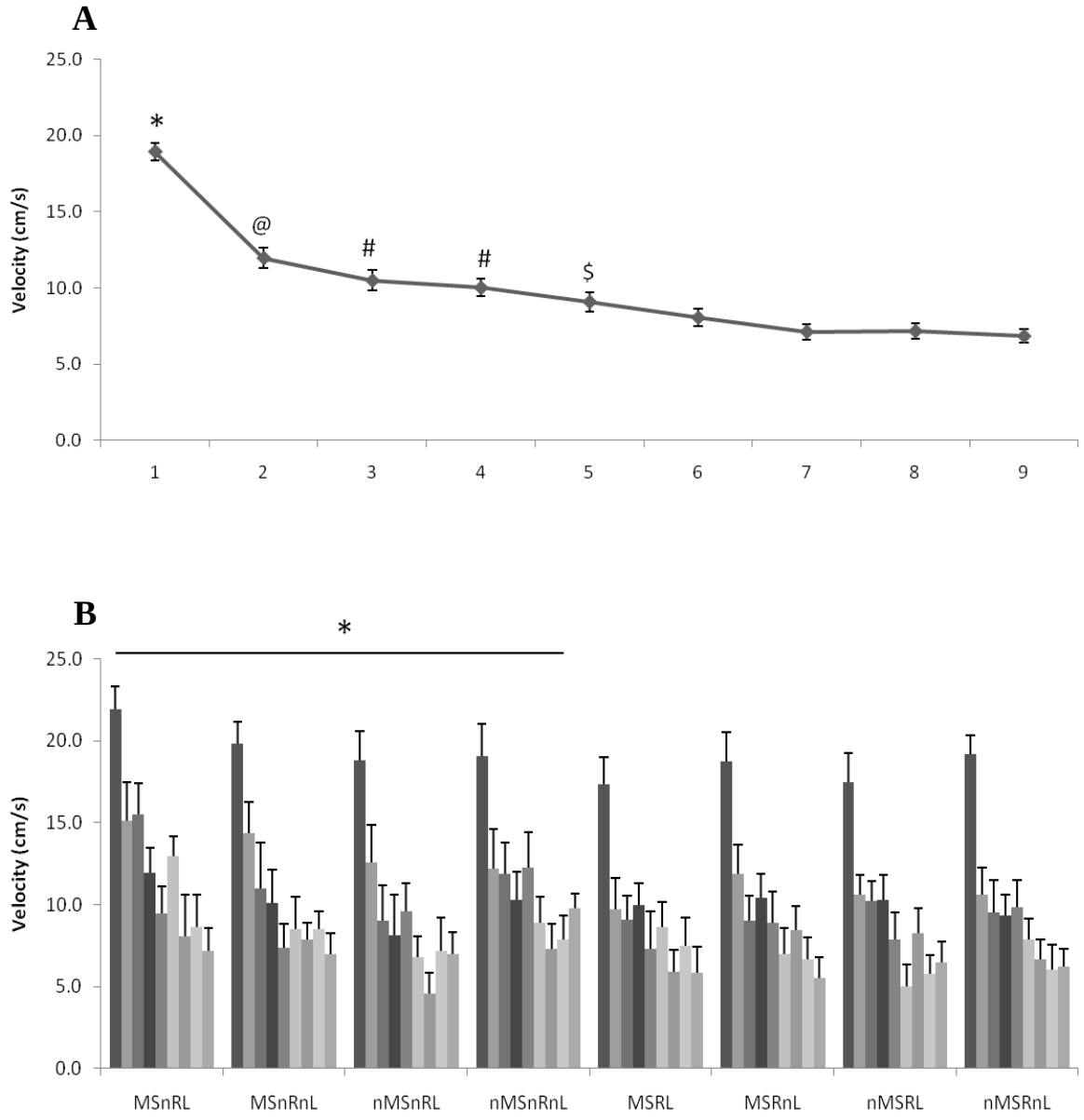

Figure 2.20 *Mean velocity in the open field in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals *p<0.001, $^{@}$p<0.05; interval > intervals 6-9, $^{\#}$p<0.01; interval > intervals 7-9, $^{\$}$p<0.05. B) Intervals shown for all groups separately: nR > R *p<0.05 (2nd, 6th intervals); interaction between MS and L, p<0.05 (6th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

i) Interval 9

There were no significant differences in this time interval for any of the parameters analysed.

j) Comparison of One Minute Intervals

Repeated measures ANOVA showed a significant effect of time on distance travelled ($F_{8,424}$ = 64.227, p = 0.000). Post hoc analysis showed that distance travelled in interval 1 was significantly greater than in all other intervals ($p < 0.000$ in each case); distance travelled in interval 2 was significantly greater than in intervals 3 to 9 ($p < 0.05$ in each case); distance travelled in interval 3 was significantly greater than in intervals 6 to 9 ($p < 0.01$ in each case); distance travelled in interval 4 was significantly greater than in intervals 6 to 9 ($p < 0.01$ in each case); distance travelled in interval 5 was significantly greater than in intervals 7 to 9 ($p < 0.05$ in each case). In all individual treatment groups, distance in interval 1 was greater than in all successive intervals. Other individual group differences were as follows: nMSnRL interval 2 > interval 7 (p = 0.033); MSnRL interval 2 > interval 9 (p = 0.023), interval 3 > 7 (p = 0.044) and interval 3 > interval 9 (p = 0.012). *See Fig 2.16.*

A significant effect of time was observed on duration in the inner zone ($F_{8, 424}$ = 2.099, p = 0.035). Post hoc tests showed that duration in the inner zone in interval 1 was significantly shorter than in interval 5 (p = 0.006) and in interval 9 (p = 0.032). *See Fig 2.17.*

A significant effect of time was observed on maximum velocity ($F_{8, 424}$ = 10.116, p = 0.000). Post hoc tests showed that maximum velocity in interval 1 was significantly greater than in all successive intervals ($p < 0.01$ in all cases); maximum velocity in interval 2 was significantly greater than in intervals 5, 7, 8 and 9 ($p < 0.05$ in all cases); maximum velocity in interval 3 was significantly greater than in intervals 5, 7, 8 and 9 ($p < 0.05$ in all cases);

maximum velocity in interval 4 was significantly greater than in intervals 7 to 9 ($p < 0.05$ in all cases). *See Fig 2.19.*

A significant effect of time was observed on mean velocity ($F_{8, 424} = 64.227$, $p = 0.000$). Post hoc tests showed that mean velocity in interval 1 was significantly greater than in all successive intervals ($p < 0.001$ in all cases); mean velocity in interval 2 was significantly greater than in all successive intervals ($p < 0.05$ in all cases); mean velocity in interval 3 was significantly greater than in intervals 6 to 9 ($p < 0.01$ in all cases); mean velocity in interval 4 was significantly greater than in intervals 6 to 9 ($p < 0.01$ in all cases); mean velocity in interval 5 was significantly greater than in intervals 7 to 9 ($p < 0.05$ in all cases). In all individual treatment groups, mean velocity in interval 1 was significantly greater than in all successive intervals. Other individual group differences were as follows: nMSnRL interval 2 > interval 7 ($p = 0.033$); MSnRL interval 2 > interval 9 ($p = 0.023$) and interval 3 > interval 7 ($p = 0.044$) and interval 9 ($p = 0.012$). *See Fig 2.20.*

2.2.2.2.3. Comparison of P49 and P63

2.2.2.2.3.1 Distance travelled

Repeated measures ANOVA revealed that rats travelled a significantly shorter distance in the open field on P63 than on P49 ($F_{1,52} = 73.432$, $p = 0.000$). Post hoc analysis revealed the following individual group differences: nMSnRnL P49 > P63 ($p = 0.040$); nMSnRL P49 > P63 ($p = 0.005$); MSnRnL P49 > P63 ($p = 0.002$); MSRnL P49 > P63 ($p = 0.040$). *See Fig 2.21A.*

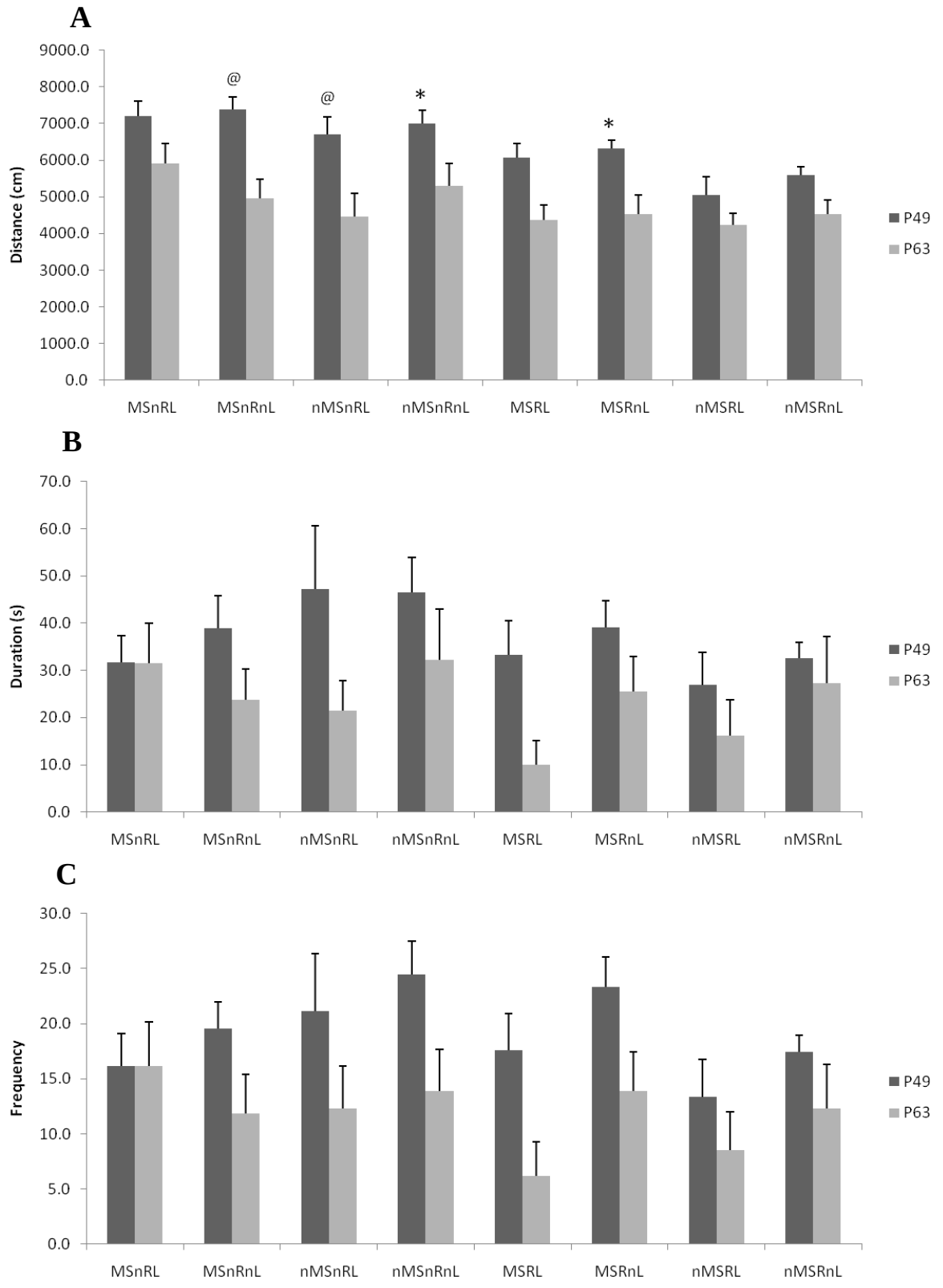

Figure 2.21 *Comparison of open field behaviour on P49 and P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: P49 > P63 ($p<0.001$), *$p<0.05$; $^{@}p<0.01$. B) Duration in the inner zone: P49 > P63 ($p < 0.001$). C) Frequency of entry into the inner zone: P49 > P63 ($p<0.001$).*

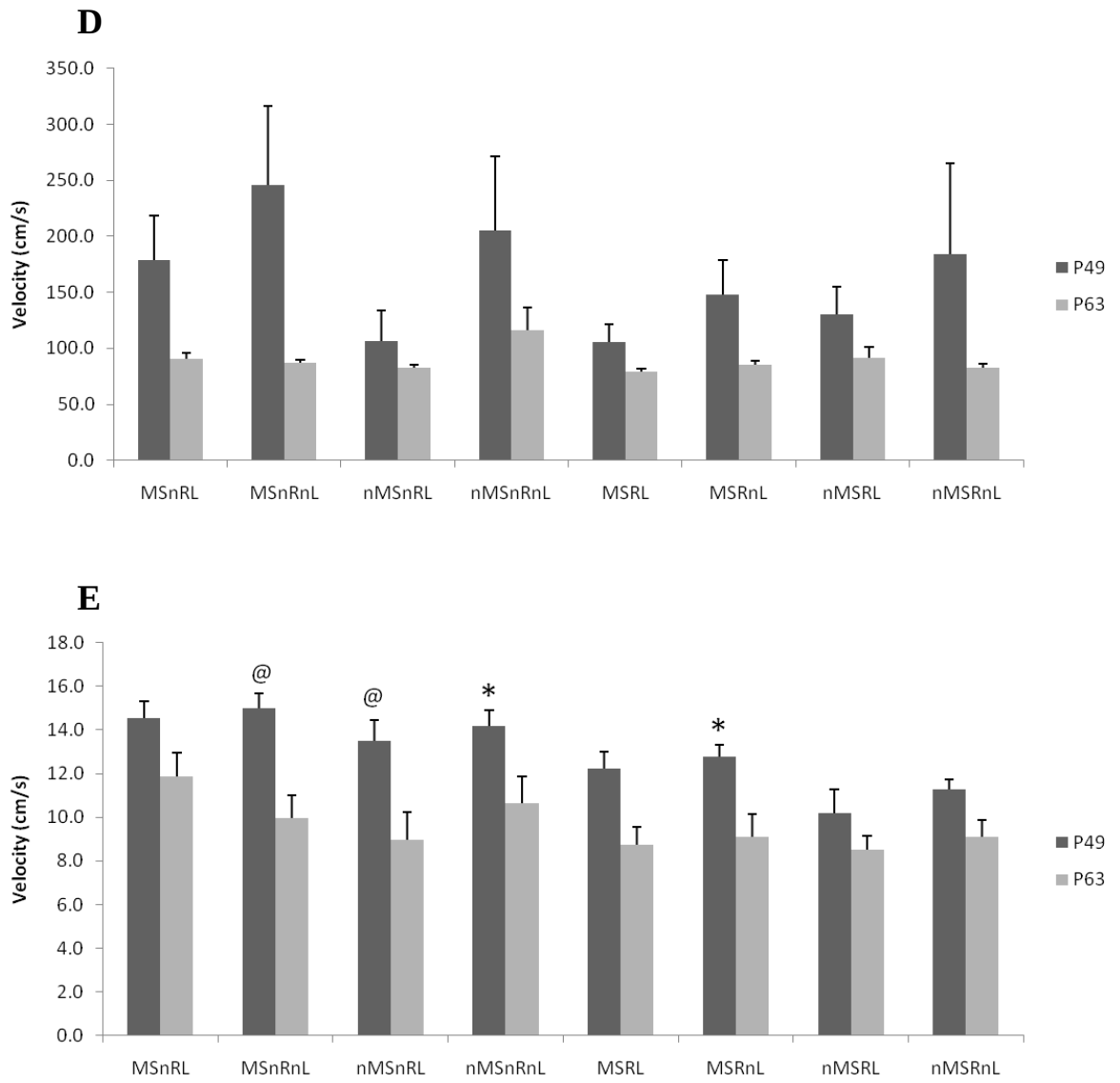

Figure 2.21 *cont. D) Maximum velocity: P49 > P63 (P<0.001). E) Mean velocity: P49 > P63 (p<0.001), *p<0.05; [@]p<0.01. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

2.2.2.2.3.2 Duration in the inner zone

Rats spent a significantly shorter time in the inner zone on P63 than on P49 ($F_{1,52}$ = 19.565, p =0.000). Post hoc analysis revealed no significant individual group differences. *See Fig 2.21B.*

2.2.2.2.3.3 Frequency of entry into the inner zone

Rats entered the inner zone far more frequently on P49 than on P63 ($F_{1,52}$ = 26.202, p = 0.000). Post hoc analysis revealed no significant individual group differences. *See Fig 2.21C.*

2.2.2.2.3.4 Maximum velocity

Maximum velocity was significantly greater on P49 than on P63 ($F_{1,52}$ = 14.854, p = 0.000). Post hoc analysis revealed no significant individual group differences. *See Fig 2.21D.*

2.2.2.2.3.5 Mean velocity

Mean velocity was significantly greater on P49 than on P63 ($F_{1,52}$ = 75.477, p = 0.000). Post hoc analysis revealed the following significant individual group differences: nMSnRnL P49 > P63 (p = 0.032); nMSnRL P49 > P63 (p = 0.005); MSnRnL P49 > P63 (p = 0.001); MSRnL P49 > P63 (p = 0.035). *See Fig 2.21E.*

2.2.2.2.4 Analysis of Non-separated rats only

The effects of exercise were further analysed by excluding maternally separated rats.

2.2.2.2.4.1 P49

a) Full Ten Minutes

A significant effect of exercise was observed on distance moved ($F_{1,27}$ = 14.482, p = 0.000), with runners travelling a significantly shorter distance than non-runners. Runners spent a significantly shorter time in the inner zone ($F_{1,27}$ = 4.423, p = 0.045), and entered the inner zone less frequently ($F_{1,27}$ = 4.844, p = 0.036) than non-runners. Runners exhibited a significantly lower mean velocity ($F_{1,27}$ = 14.336, p = 0.000) than non-runners. *See Fig 2.22.*

b) Five Minute Intervals

Runners moved a significantly shorter distance in the first five minutes than non-runners ($F_{1,27}$ = 6.116, p = 0.020), and exhibited a reduced mean velocity in the first five minutes as compared to non-runners ($F_{1,27}$ = 6.232, p = 0.019). *See Fig 2.23.*

Runners moved a shorter distance in the second five minutes than non-runners ($F_{1,27}$ = 14.721, p = 0.000), spent less time in the inner zone than non-runners ($F_{1,27}$ = 5.646, p = 0.025), entered the inner zone less frequently than non-runners ($F_{1,27}$ = 9.815, p = 0.004) and had significantly lower mean velocity than non-runners ($F_{1,27}$ = 14.323, p = 0.000). *See Fig 2.23.*

Comparison of the first and second five minute intervals by means of repeated measures ANOVA showed significant effects of time on open field behaviour. Distance travelled was significantly less in the second five minutes ($F_{1,27}$ = 37.308, p = 0.000). Duration in the inner zone was significantly greater in the second five minutes ($F_{1,27}$ = 15.757, p = 0.000). Frequency of entry into the inner zone was significantly greater in the second five minutes ($F_{1,27}$ = 9.117, p = 0.005), and there was a significant interaction between time and running ($F_{1,27}$ = 6.610, p = 0.016), with inner zone frequency increasing significantly over time in non-runners but not in runners. Mean velocity was significantly less in the second five minutes than in the first ($F_{1,27}$ = 32.541, p = 0.000). *See Fig 2.23.*

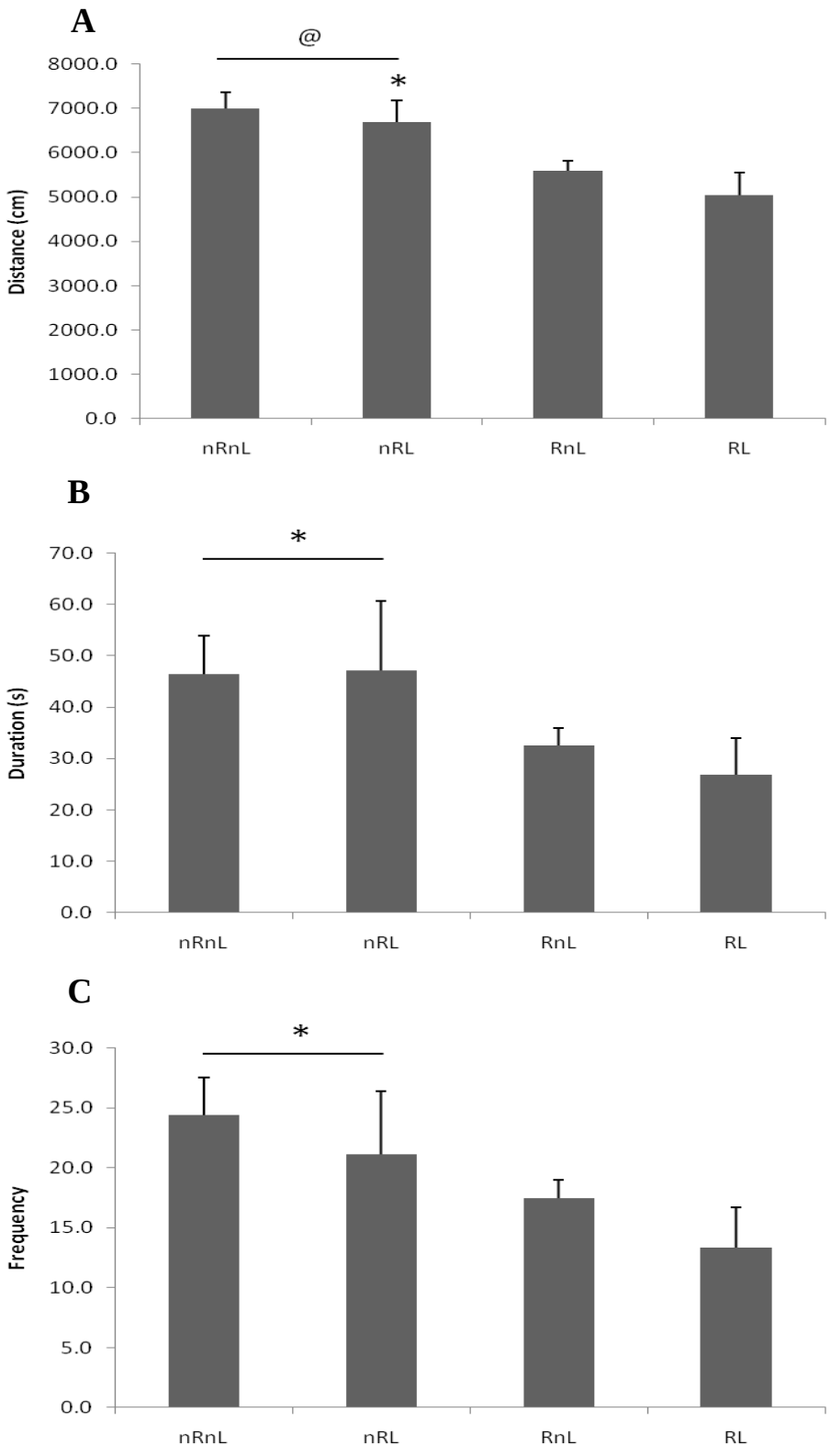

Figure 2.22. *Analysis of ten minutes in the open field on P49, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: nR > R *p<0.05; $^{@}$p<0.001. B) Duration in the inner zone: nR > R *p<0.05. C) Frequency of entry into the inner zone: nR > R *p<0.05.*

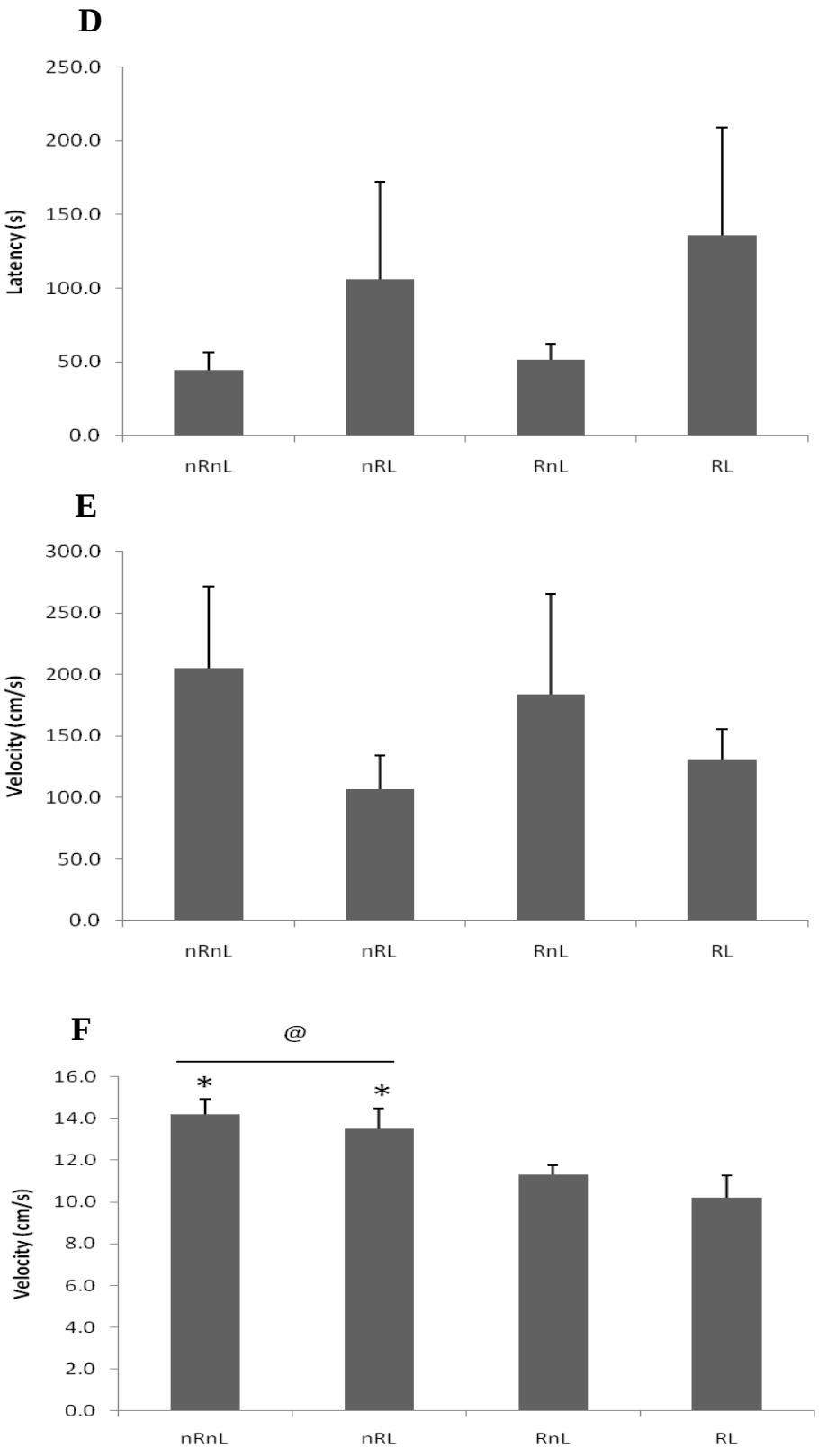

Figure 2.22 *cont. D) Latency to enter the inner zone: no significant effects. E) Maximum velocity: no significant effects. F) Mean velocity: nR > R* $^{@}p<0.001$*: *p<0.05. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

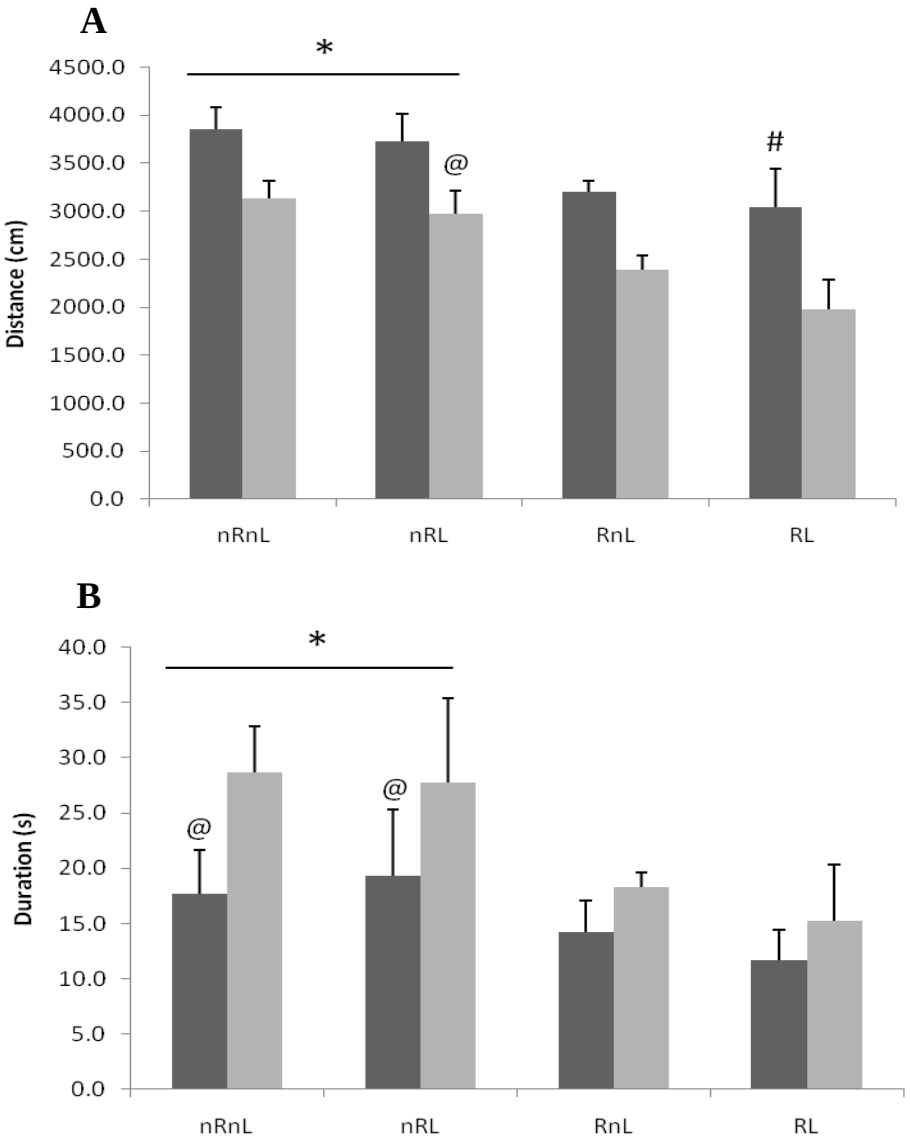

Figure 2.23 *Analysis of two consecutive five minute intervals in the open field on P49, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: nR > R *p<0.05 (1st interval), p<0.001 (2nd interval), @p<0.05; 1st interval > 2nd interval (p<0.001): #p<0.01. B) Duration in the inner zone: nR > R *p<0.05 (2nd interval only). 1st interval < 2nd interval (p<0.001): @p<0.05.*

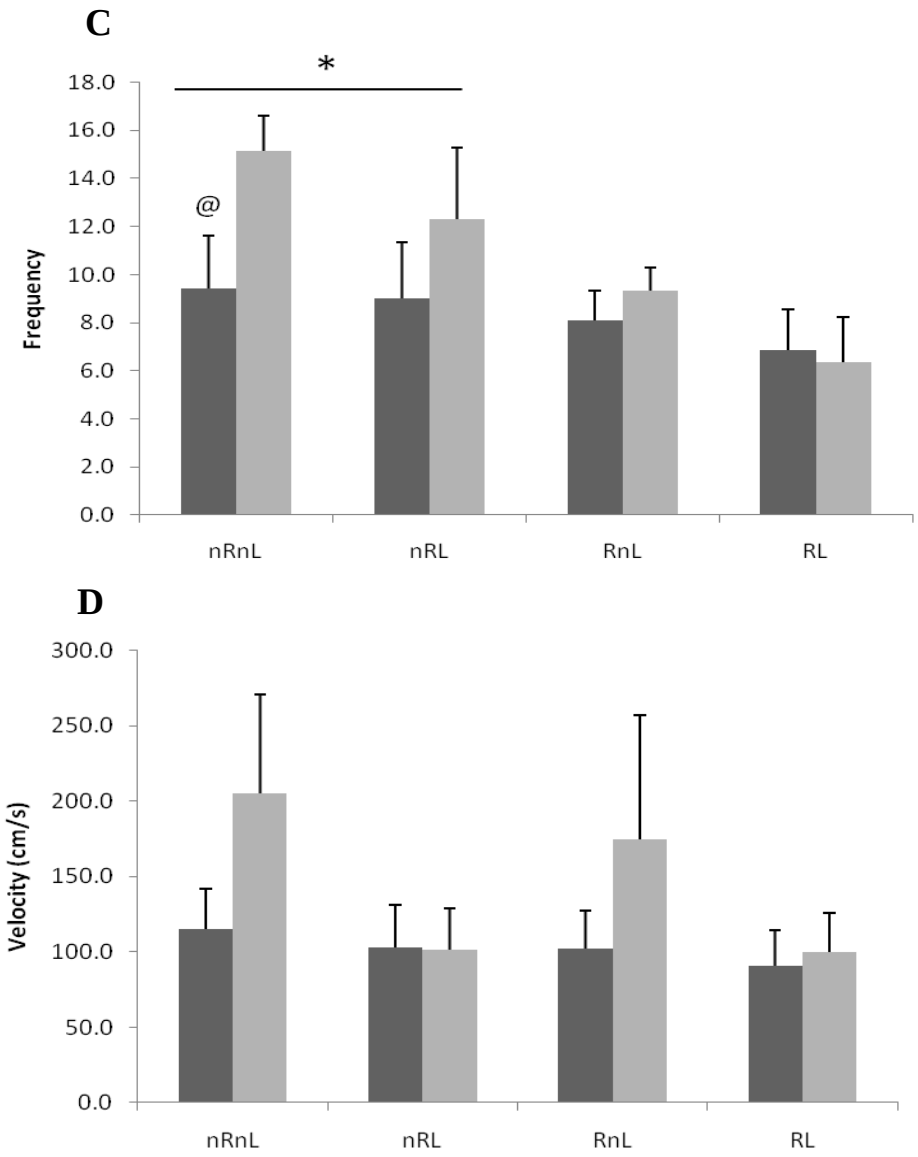

Figure 2.23 *cont. C) Frequency of entry into the inner zone: nR > R *p<0.01 (2nd interval only). 1st interval < 2nd interval (p<0.01): @p<0.01; interaction between time interval and R, p<0.05. D) Maximum velocity: no significant effects.*

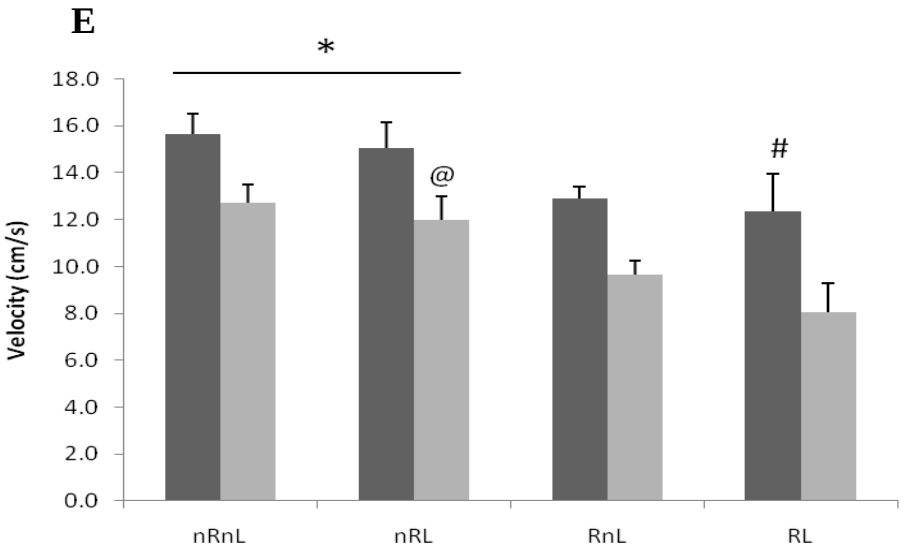

Figure 2.23 cont. *E) Mean velocity: nR > R *p<0.05 (1st interval), p<0.001 (2nd interval), @p<0.05. 1st interval > 2nd interval (p<0.001): #p<0.01. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

2.2.2.2.4.2 P63

a) Full Ten Minutes

No significant effects of running or lesion were observed on any behavioural parameters analysed. *See Fig 2.24.*

b) Five Minute Intervals

No significant effects of running or lesion were observed on any behavioural parameter in either the first or second intervals analysed.

When the first and second intervals were compared by means of repeated measures ANOVA, significant effects of time were observed. A significantly shorter distance was travelled in the second five minutes ($F_{1,28}$ = 98.512, p = 0.000). A significant interaction between time and lesion was observed for maximum velocity ($F_{1,28}$ = 5.159, p = 0.031); post hoc analysis showed that maximum velocity of non-lesioned rats tended to increase over time while that of

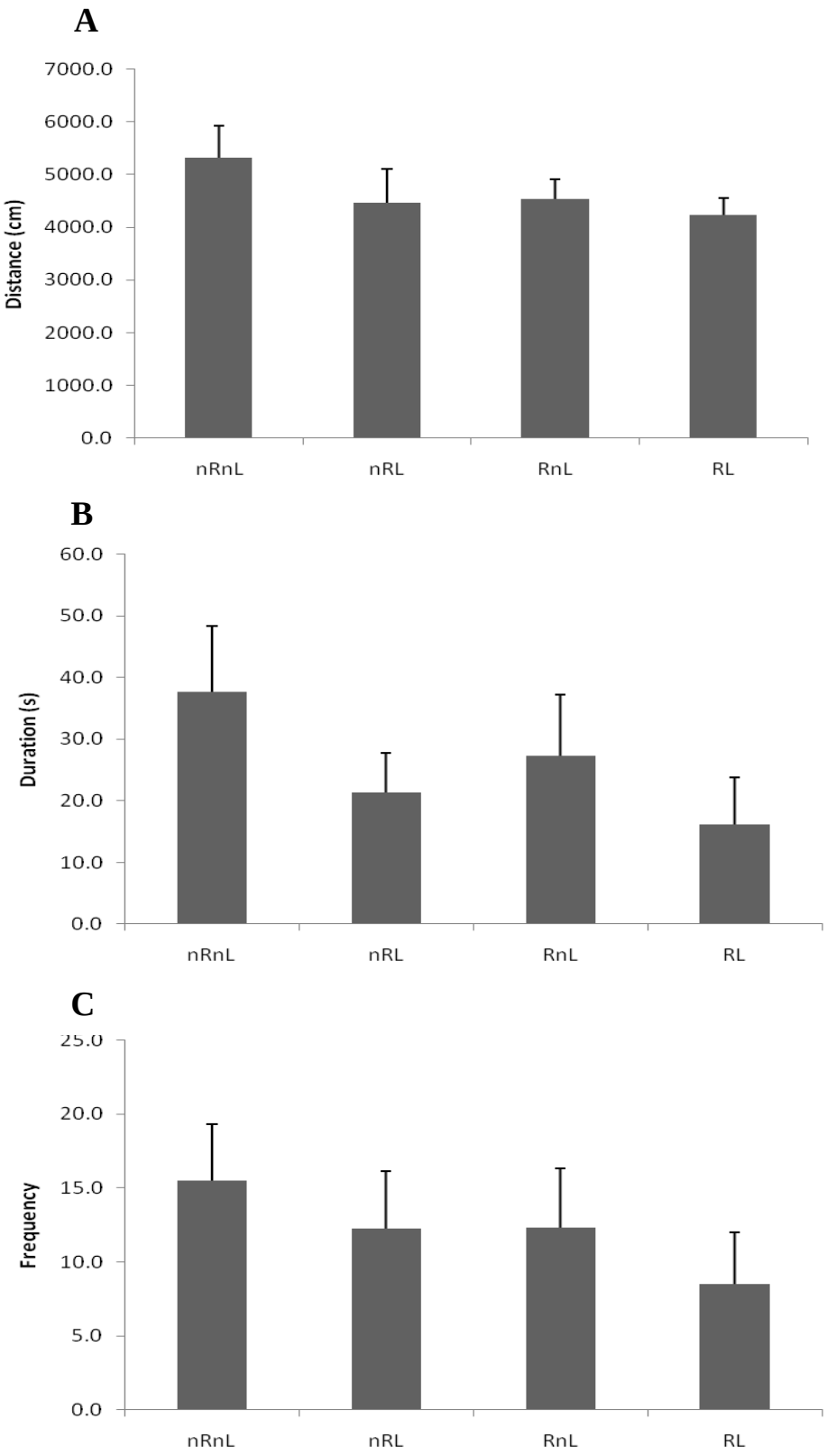

Figure 2.24. *Analysis of ten minutes in the open field on P63, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: no significant effects. B) Inner zone duration: no significant effects. C) Frequency of entry into the inner zone: no significant effects.*

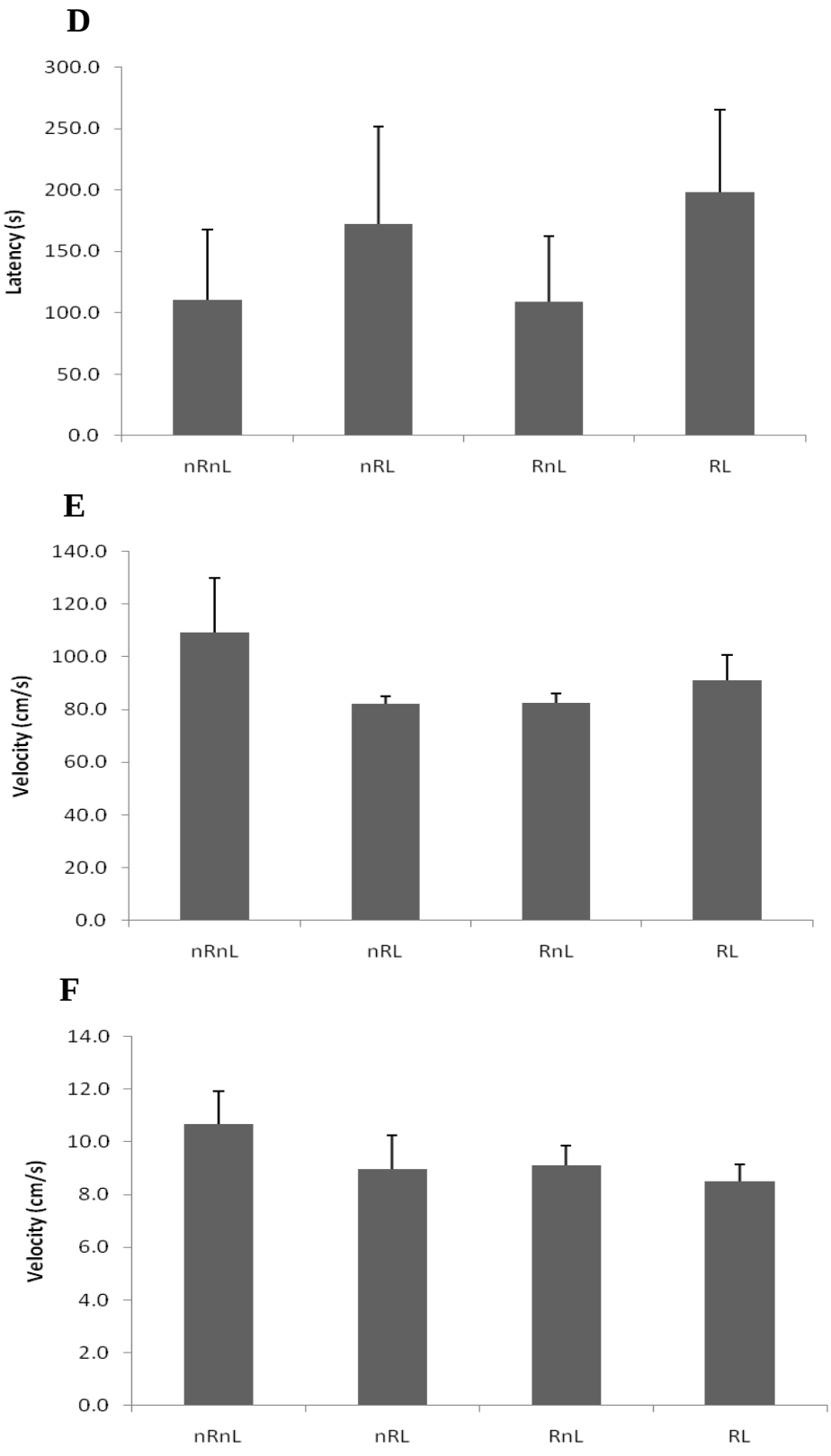

Figure 2.24 *cont. D) Latency to enter the inner zone: no significant effects. E) Maximum velocity: no significant effects. F) Mean velocity: no significant effects. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

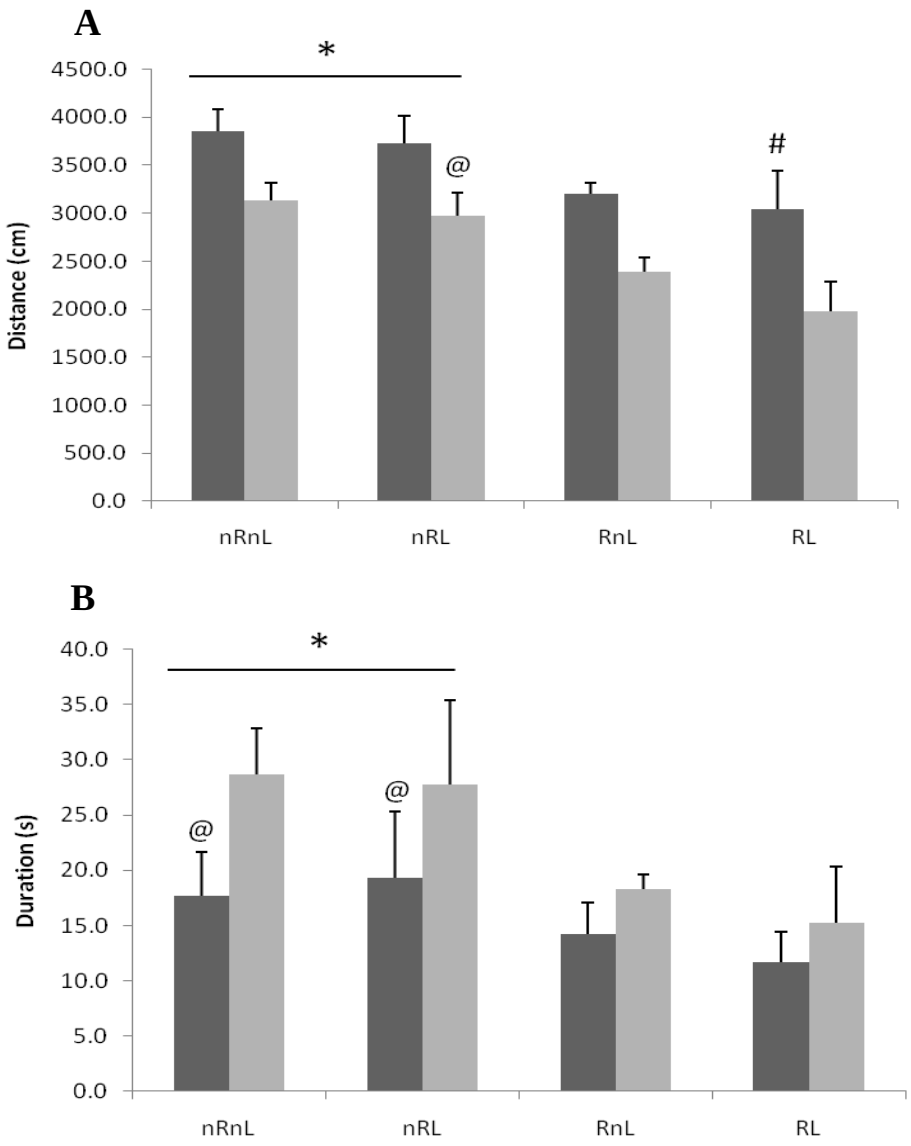

Figure 2.25 *Analysis of two consecutive five minute intervals in the open field on P63, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: 1st interval > 2nd interval *p<0.001. B) Duration in the inner zone: no significant effects.*

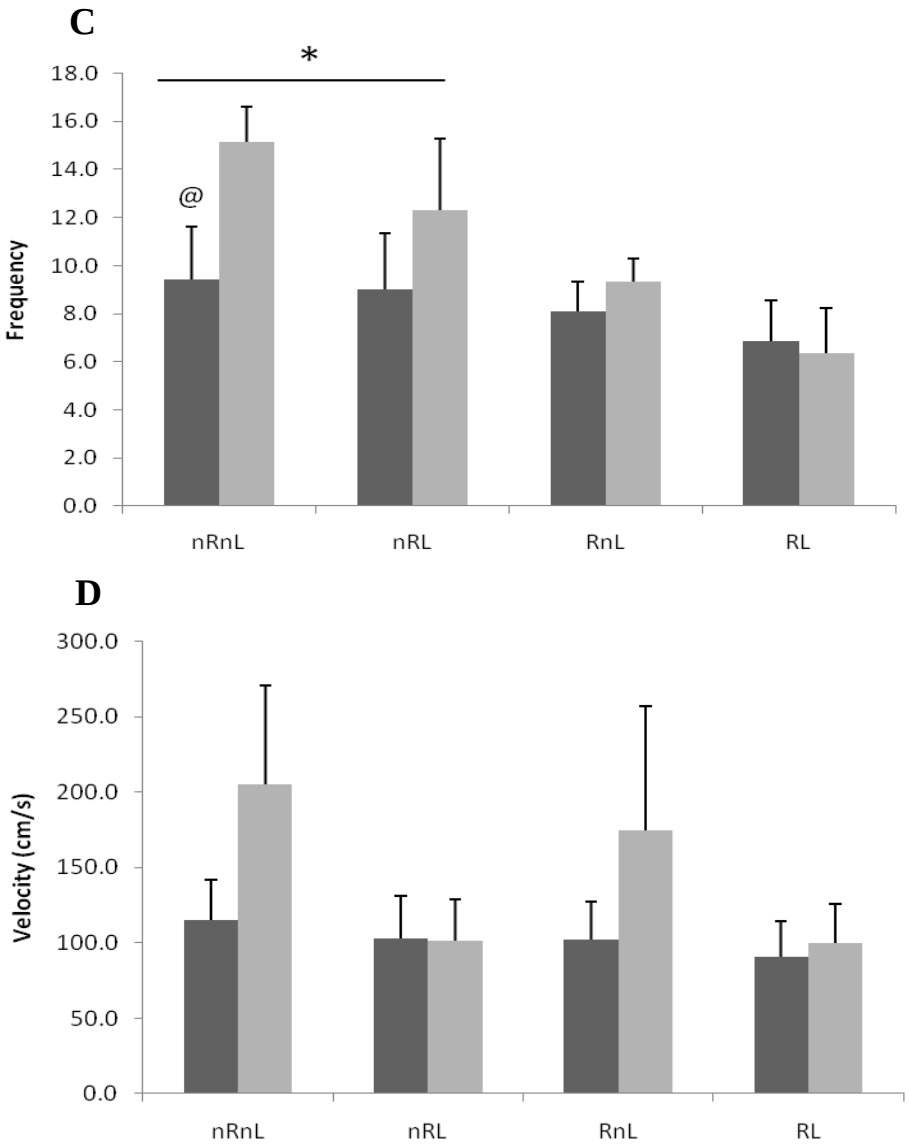

Figure 2.25 *cont. C) Frequency of entry into the inner zone: no significant effects. D) Maximum velocity: interaction between time and L, $p<0.05$.*

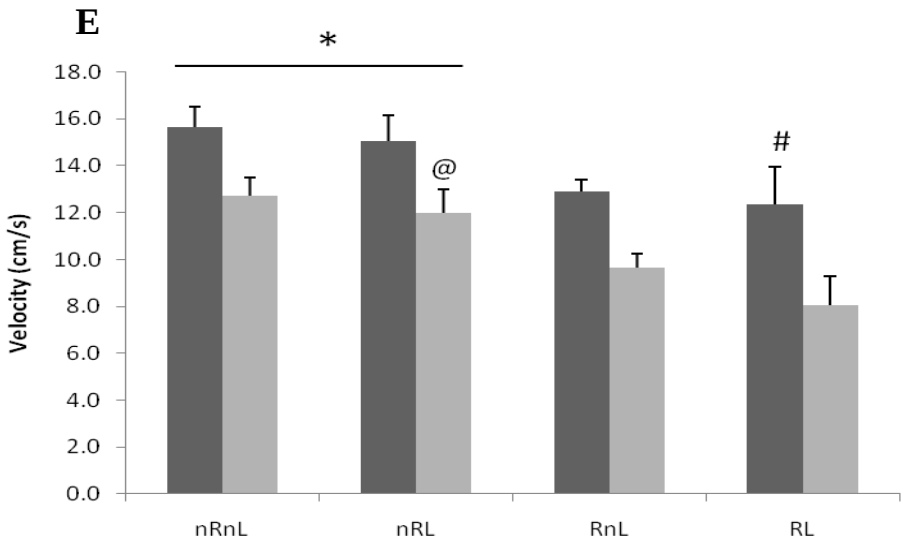

Figure 2.25 *cont. E) Mean velocity: 1st interval > 2nd interval *p<0.001. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

lesioned rats decreased, although this was only significant for lesioned rats (p = 0.031). Mean velocity decreased significantly over time ($F_{1,28}$ = 99.057, p = 0.000). *See Fig 2.25.*

2.2.2.2.4.3 Comparison of P49 and P63

Comparison of P49 and P63 by means of repeated measures ANOVA revealed a significant effect of time on several behavioural parameters. A significantly shorter distance was travelled on P63 than on P49 ($F_{1,27}$ = 32.117, p = 0.000). Inner zone duration was significantly lower on P63 than on P49 ($F_{1,27}$ = 8.697, p = 0.007). Frequency of entry into the inner zone was significantly less on P63 than on P49 ($F_{1,27}$ = 15.393, p = 0.000). Maximum velocity was significantly lower on P63 than on P49 ($F_{1,27}$ = 4.376, p = 0.046). Mean velocity was significantly lower on P63 than on P49 ($F_{1,27}$ = 34.279, p = 0.000). *See Fig 2.26.*

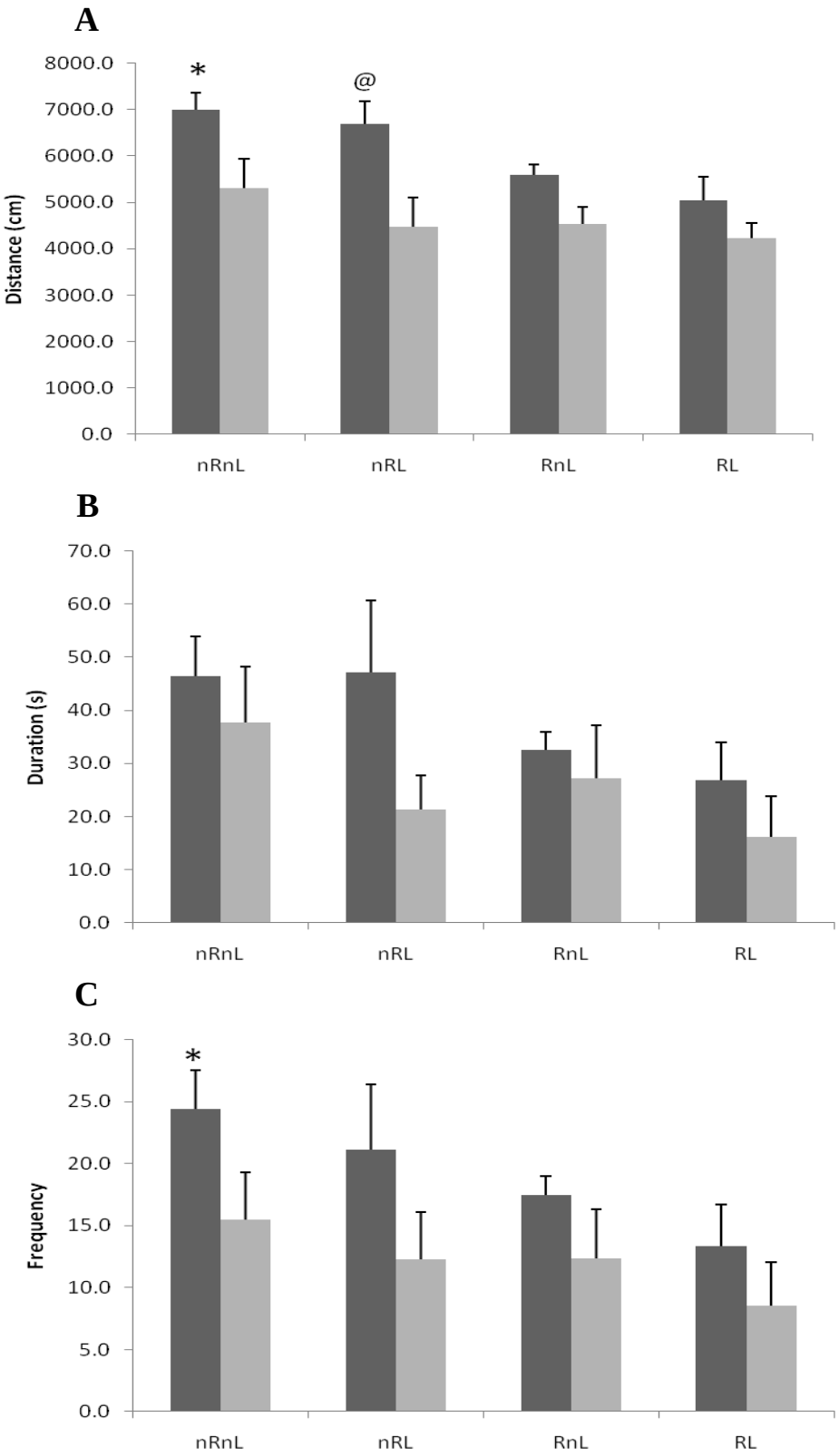

Figure 2.26 *Comparison of open field behaviour on P49 and P63, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: P49 > P63 ($p<0.001$): *$p<0.05$; $^{@}p<0.01$. B) Duration in the inner zone: P49 > P63 ($p<0.01$).C) Frequency of entry into the inner zone: P49 > P63 ($p<0.001$): *$p<0.05$.*

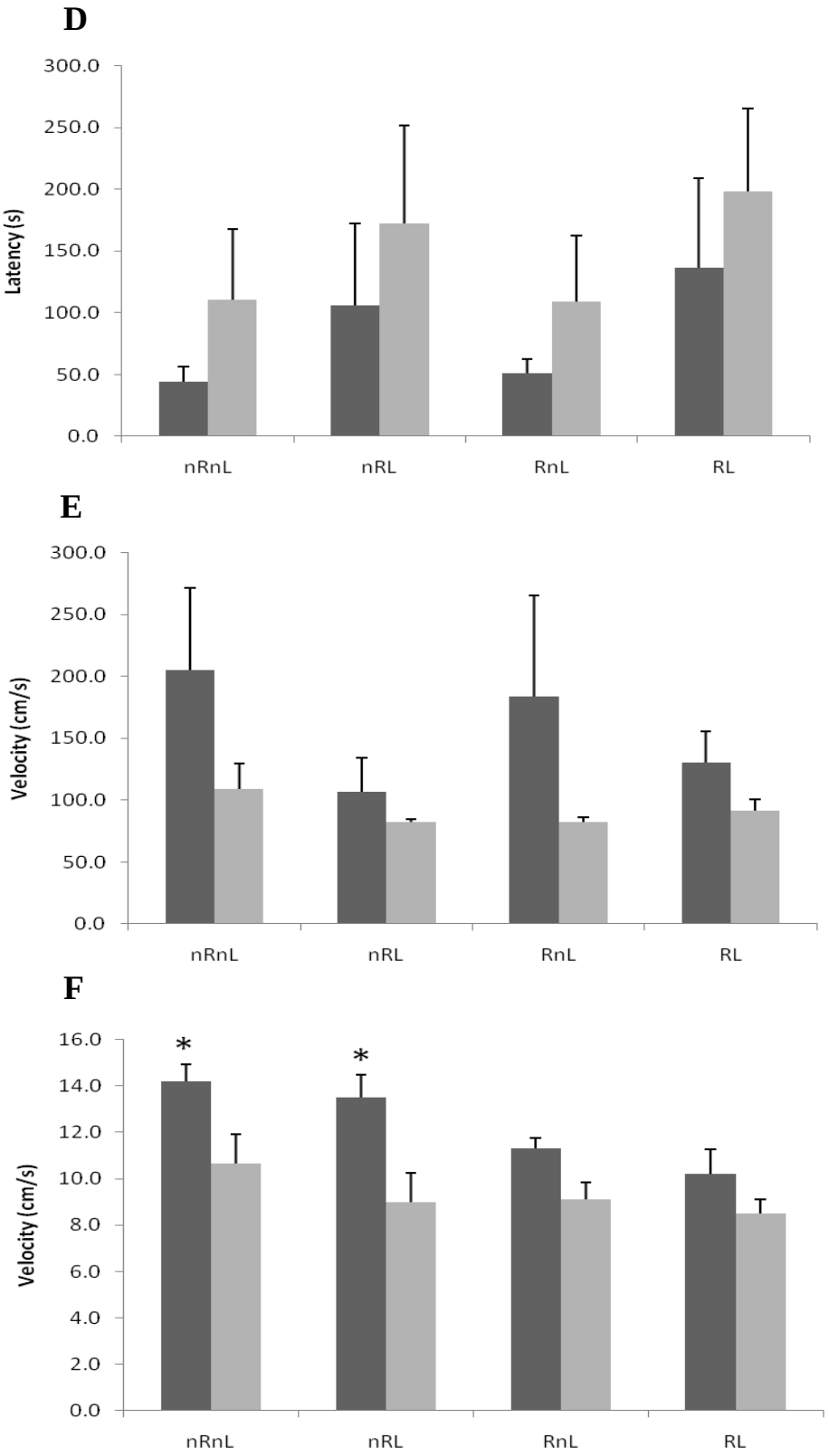

Figure 2.26 *cont. D) Latency to enter the inner zone: no significant effects. E) Maximum velocity: P49 > P63, p<0.05. F) Mean velocity: p49 > P63 (p<0.001): *p<0.01. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

2.2.2.3 ELEVATED PLUS MAZE

The following parameters of elevated plus maze (EPM) behaviour were analysed: total distance travelled, duration in and frequency of entry into the open arms, duration in the close arms, duration in the central square and mean and maximum velocities. Each parameter was analysed for the full five minute period, and then for successive one minute intervals. Results were statistically analysed by means of factorial ANOVA, and the individual intervals were further compared by means of repeated measures ANOVA. A comparison of behaviour on P49 and P63 was performed by means of repeated measures ANOVA. Any significant results ($p < 0.05$) were investigated by means of post hoc Newman Keuls tests. *See appendix A5.1.5.*

2.2.2.3.1 P49

2.2.2.3.1.1 Full Five Minutes

A significant effect of exercise was observed on total distance moved ($F_{1,54} = 11.751$, $p = 0.001$). Post hoc analysis showed that runners travelled a shorter distance than non-runners. *See Fig 2.27A.*

A significant effect of exercise was also observed on mean velocity ($F_{1,54} = 11.235$, $p = 0.001$). Post hoc analysis showed that runners had a lower mean velocity than non-runners. *See Fig 2.27G.*

No significant differences were observed for any of the following parameters: duration in the open arms, frequency of entry into the open arms, duration in the closed arms, duration in the central square or maximum velocity. *See Fig 2.27B-F.*

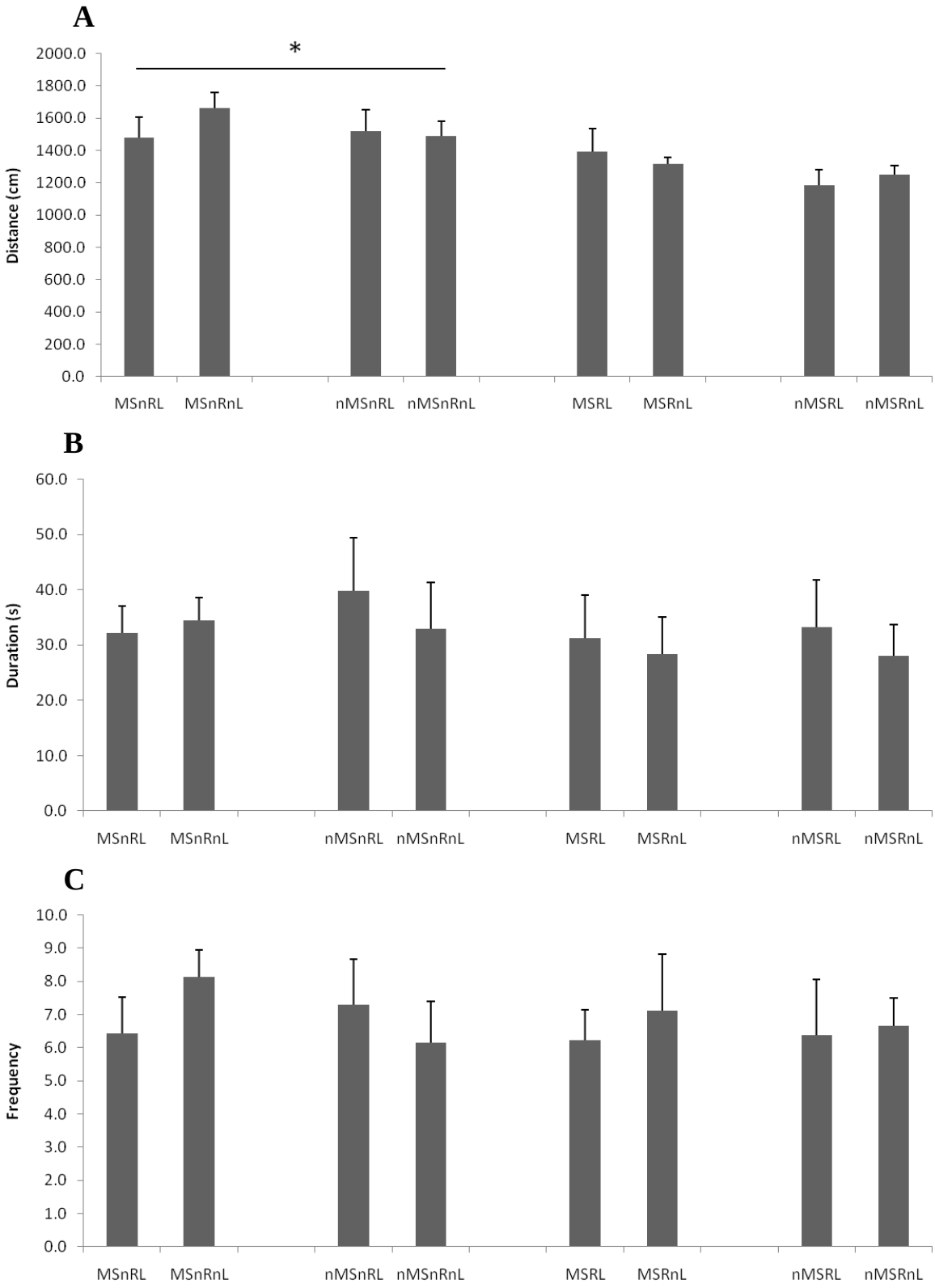

Figure 2.27 *Analysis of five minutes in the elevated plus maze on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: nR > R, *p<0.01. B) Duration in the open arms: no significant effects. C) Frequency of entry into the open arms: no significant effects.*

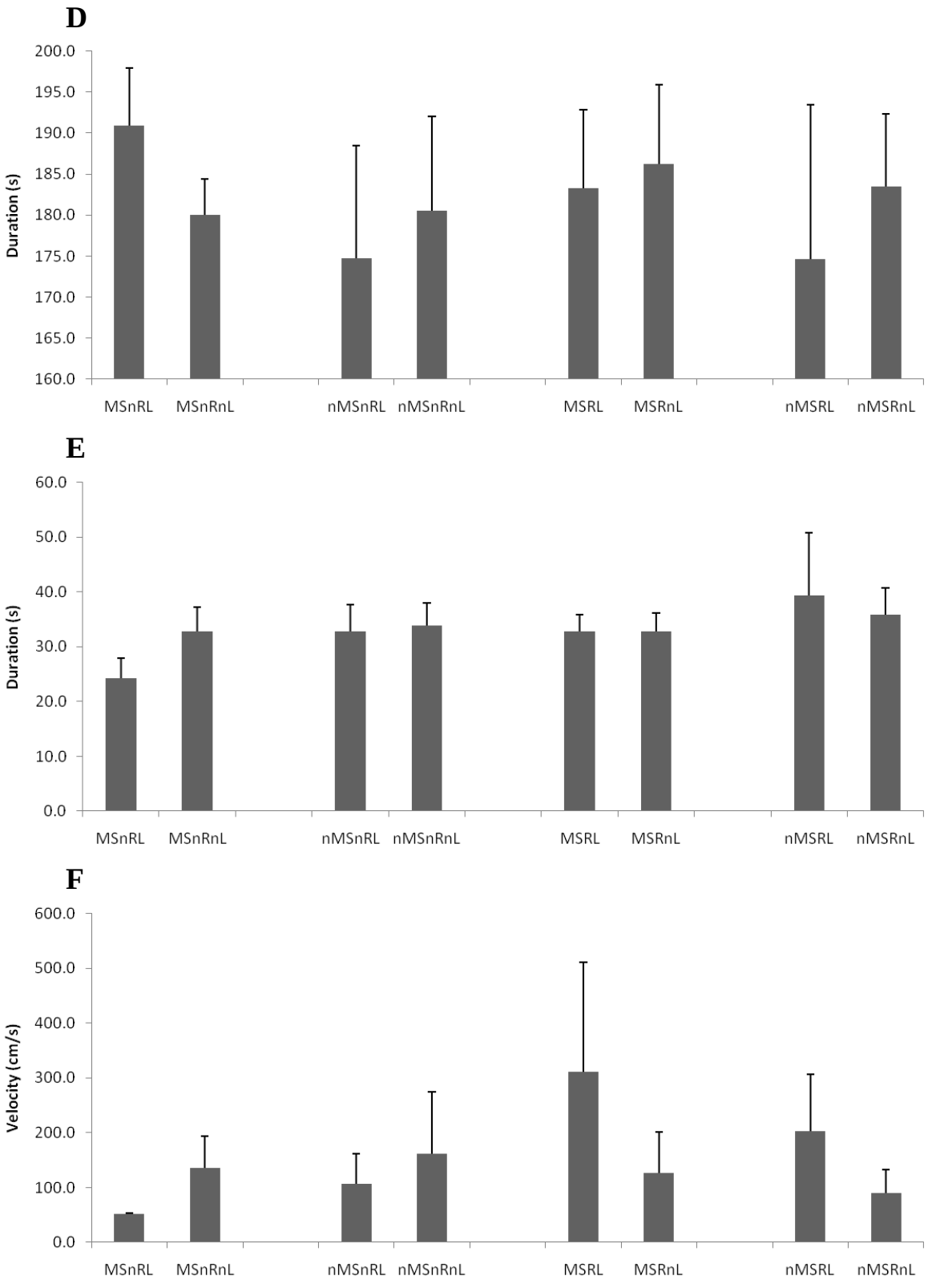

Figure 2.27 *cont. D) Duration in the closed arms: no significant effects. E) Duration in the central square: no significant effects. F) Maximum velocity: no significant effects.*

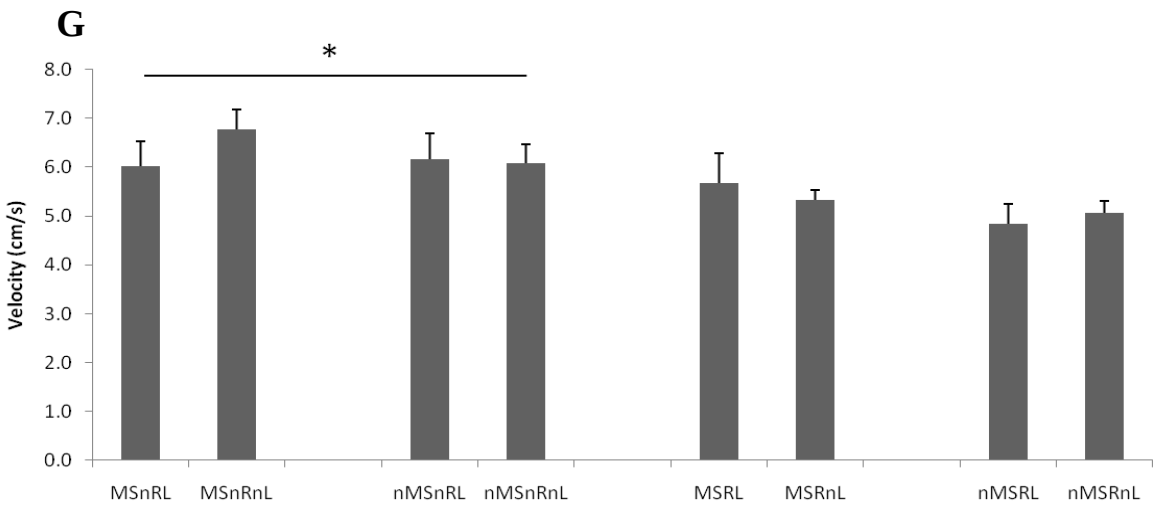

Figure 2.27 *cont. G) Mean velocity: nR > R *p<0.01. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

2.2.2.3.1.2 One Minute Time-bins

a) Interval 1

Runners travelled a significantly shorter distance than non-runners ($F_{1,54}$ = 10.195, p = 0.002). Lesioned rats had a significantly lower frequency of entry into the open arms than non-lesioned rats ($F_{1,54}$ = 4.227, p = 0.045). Runners spent a significantly greater time in the central square than non-runners ($F_{1,54}$ = 11.406, p = 0.001). Runners exhibited a significantly lower mean velocity than non-runners ($F_{1,54}$ = 10.288, p = 0.002).

b) Interval 2

Runners travelled a significantly shorter distance ($F_{1,54}$ = 7.388, p = 0.009), and exhibited a significantly lower mean velocity ($F_{1,54}$ = 7.380, p = 0.009) than non-runners.

c) Interval 3

Runners travelled a significantly shorter distance ($F_{1,54}$ = 8.307, p = 0.006) and exhibited a significantly lower mean velocity ($F_{1,54}$ = 8.190, p = 0.006) than non-runners.

d) Interval 4

Runners travelled a significantly shorter distance ($F_{1,54} = 4.214$, $p = 0.045$) and exhibited a significantly lower mean velocity ($F_{1,54} = 4.096$, $p = 0.048$) than non-runners.

e) Interval 5

There was a significant interaction between exercise and lesion for duration in the open arms ($F_{1,54} = 4.045$, $p = 0.049$). Post hoc analysis showed no significant individual differences, but the lesion tended to reduce open arm duration in non-runners and increase it in runners.

f) Comparison of the One Minute Intervals

A significant effect of time was observed on distance travelled ($F_{4,216} = 192.878$, $p = 0.000$). Distance travelled was significantly greater in the first interval than in all successive intervals ($p < 0.001$ in each case), in the second interval than in all successive intervals ($p < 0.001$ in each case), in the third interval than in both successive intervals ($p < 0.001$ in both cases) and in interval four than in interval 5 ($p = 0.001$). *See Fig 2.28.*

A significant effect of time was observed on duration in the open arms ($F_{4,216} = 55.563$, $p = 0.000$). Duration was significantly greater in the first interval than in all successive intervals ($p < 0.001$ in all cases), in the second interval than in all successive intervals ($p < 0.01$ in all cases) and in the third interval than in both successive intervals ($p < 0.05$ in both cases). *See Fig 2.29.*

A significant effect of time was observed on frequency of open arm entry ($F_{4,216} = 47.577$, $p = 0.000$). Frequency was significantly greater in the first interval than in all successive intervals ($p < 0.001$ in all cases), in the second interval than in all successive intervals ($p < 0.001$) and in the third interval than in both successive intervals ($p < 0.01$). *See Fig 2.30.*

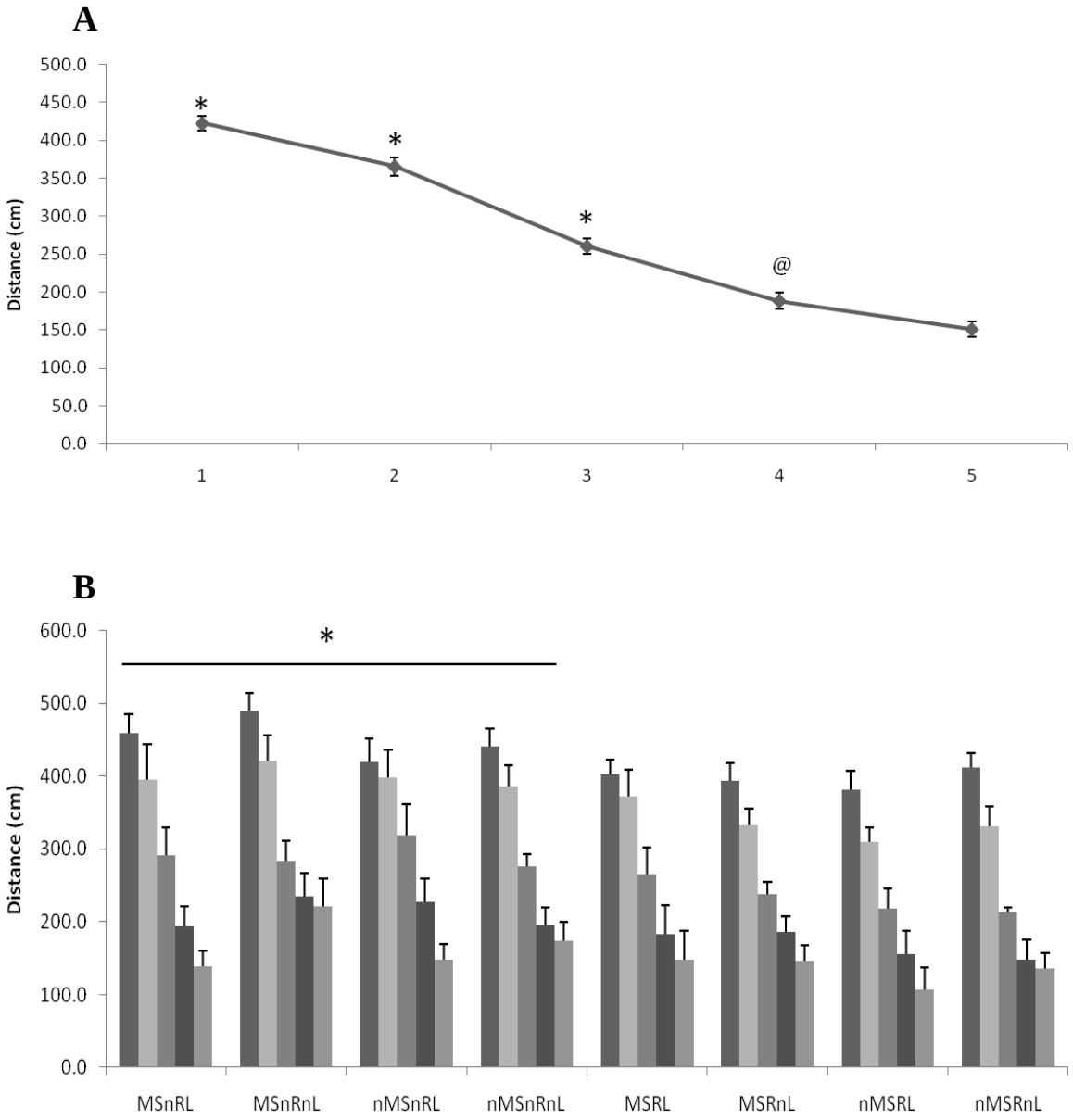

Figure 2.28 *Distance travelled in the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals* $^{@}p<0.01$*; *p<0.001. B) Intervals shown for all groups separately: nR > R, *p<0.05 (4th interval), p<0.01 (1st, 2nd, 3rd intervals). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

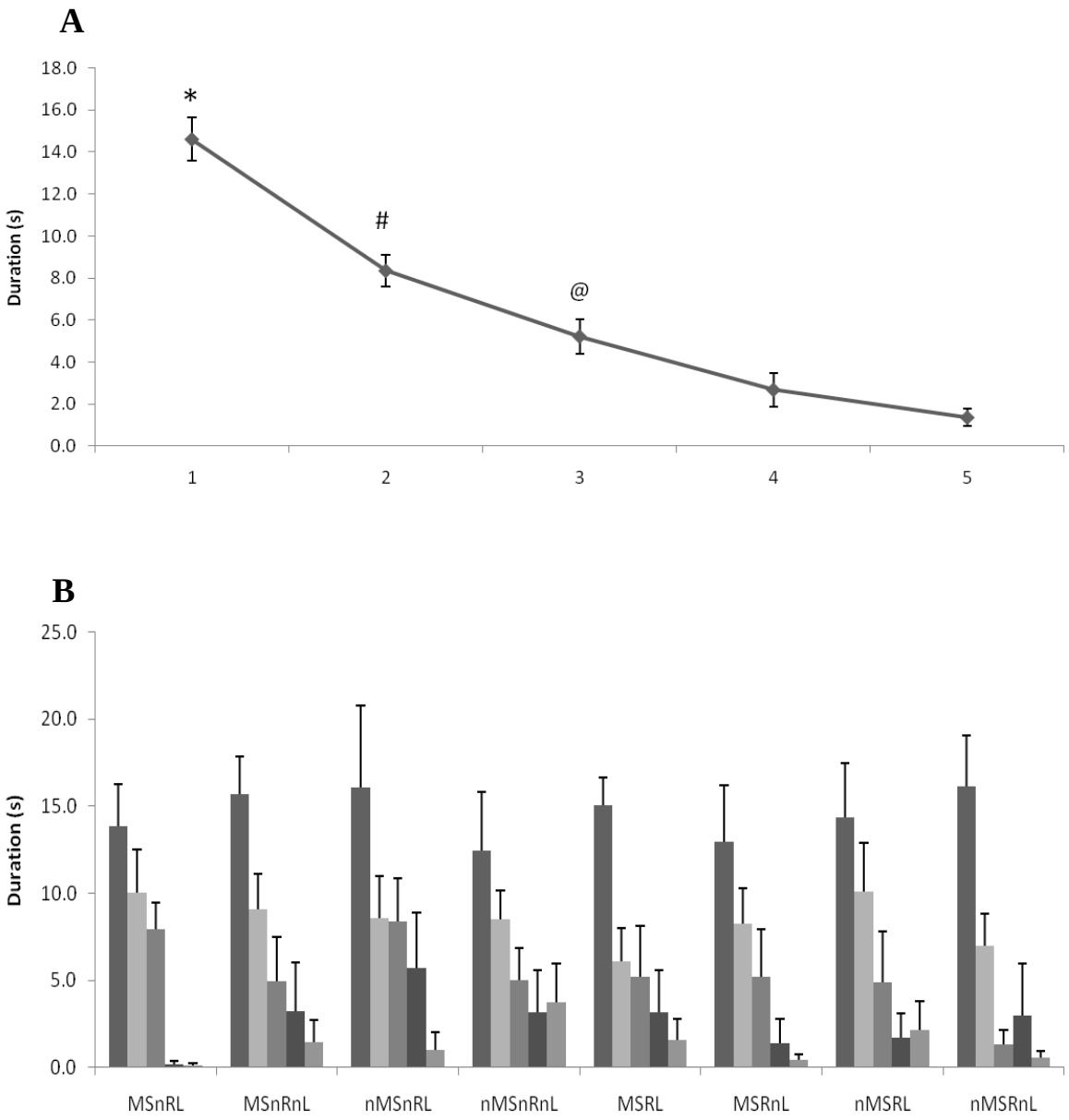

Figure 2.29 *Duration in the open arms of the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals* $^{@}p<0.05$; $^{\#}p<0.01$; $^{*}p<0.001$*.B) Intervals shown for all groups separately: Interaction between R and L, p<0.05 (5th interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

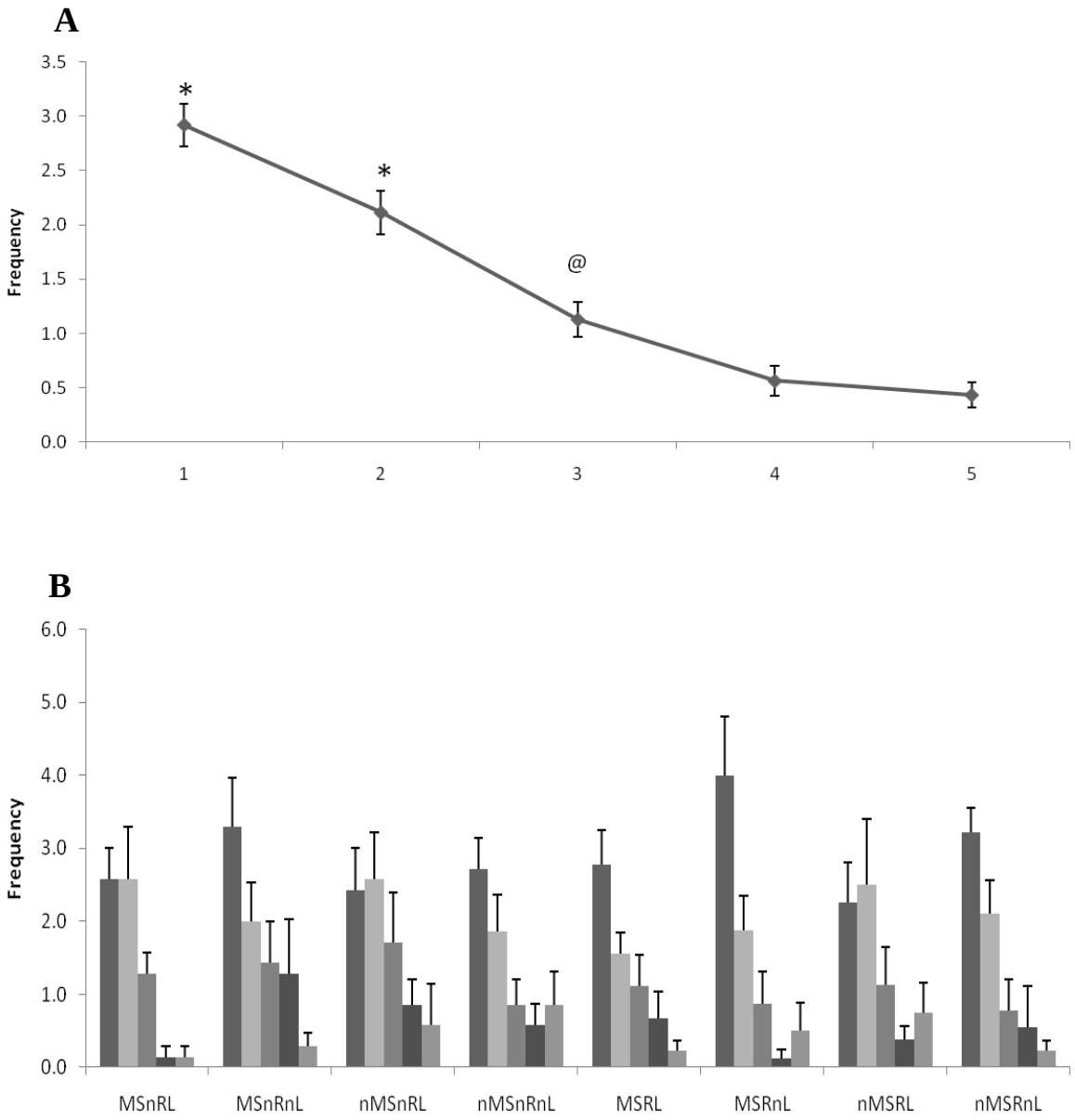

Figure 2.30 *Frequency of entry into the open arms of the elevated plus maze in consecutive 1 minute intervals on P49 by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals* $^{@}p<0.01$; $*p<0.001$. *B) Intervals shown for all groups separately: nL > L, $p<0.05$ (1^{st} interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

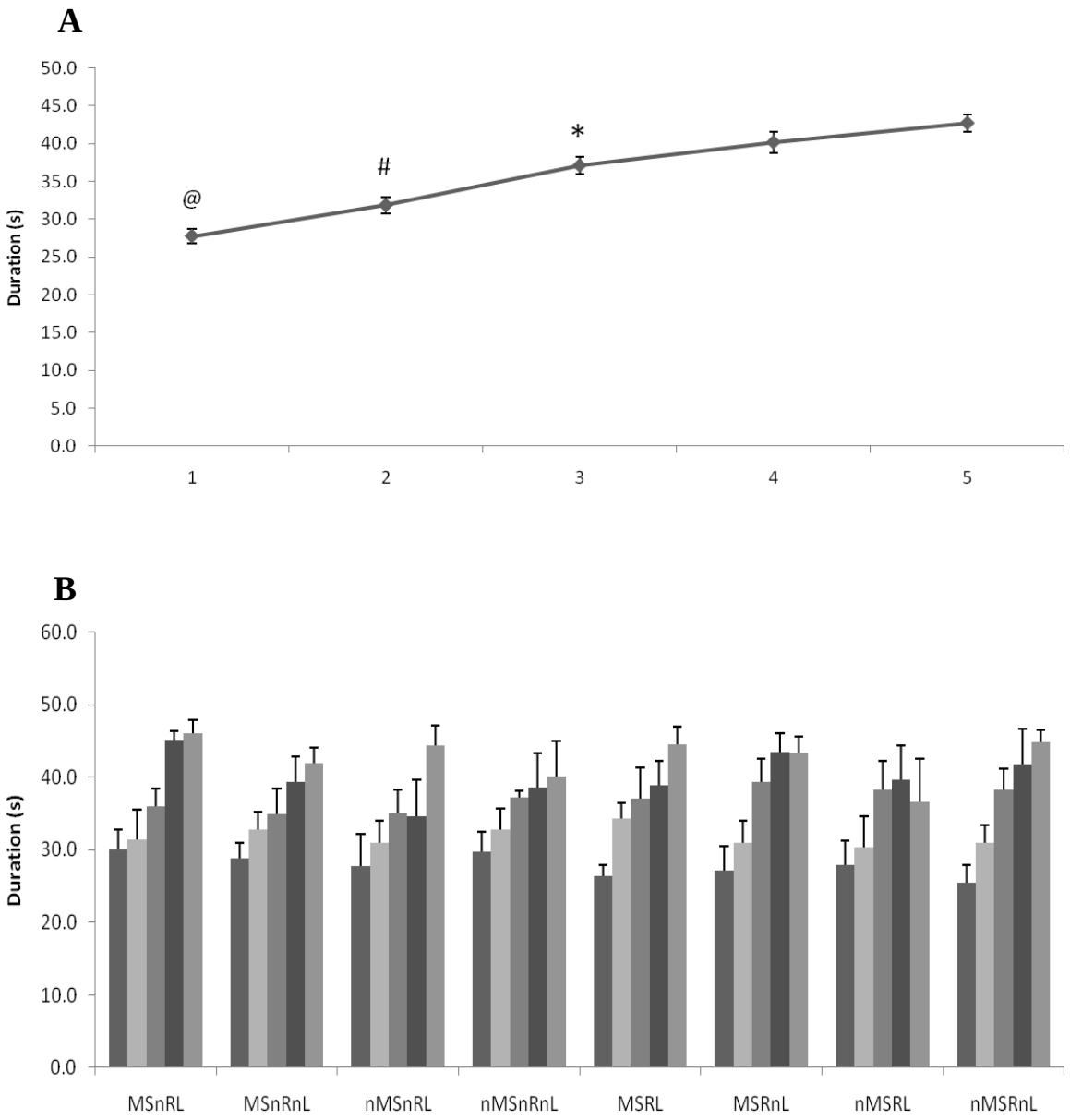

Figure 2.31 *Duration in the closed arms of the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval < all successive intervals *p<0.05; $^{@}p<0.01$; $^{\#}p<0.001$. B) Intervals shown for all groups separately: no significant effects. Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

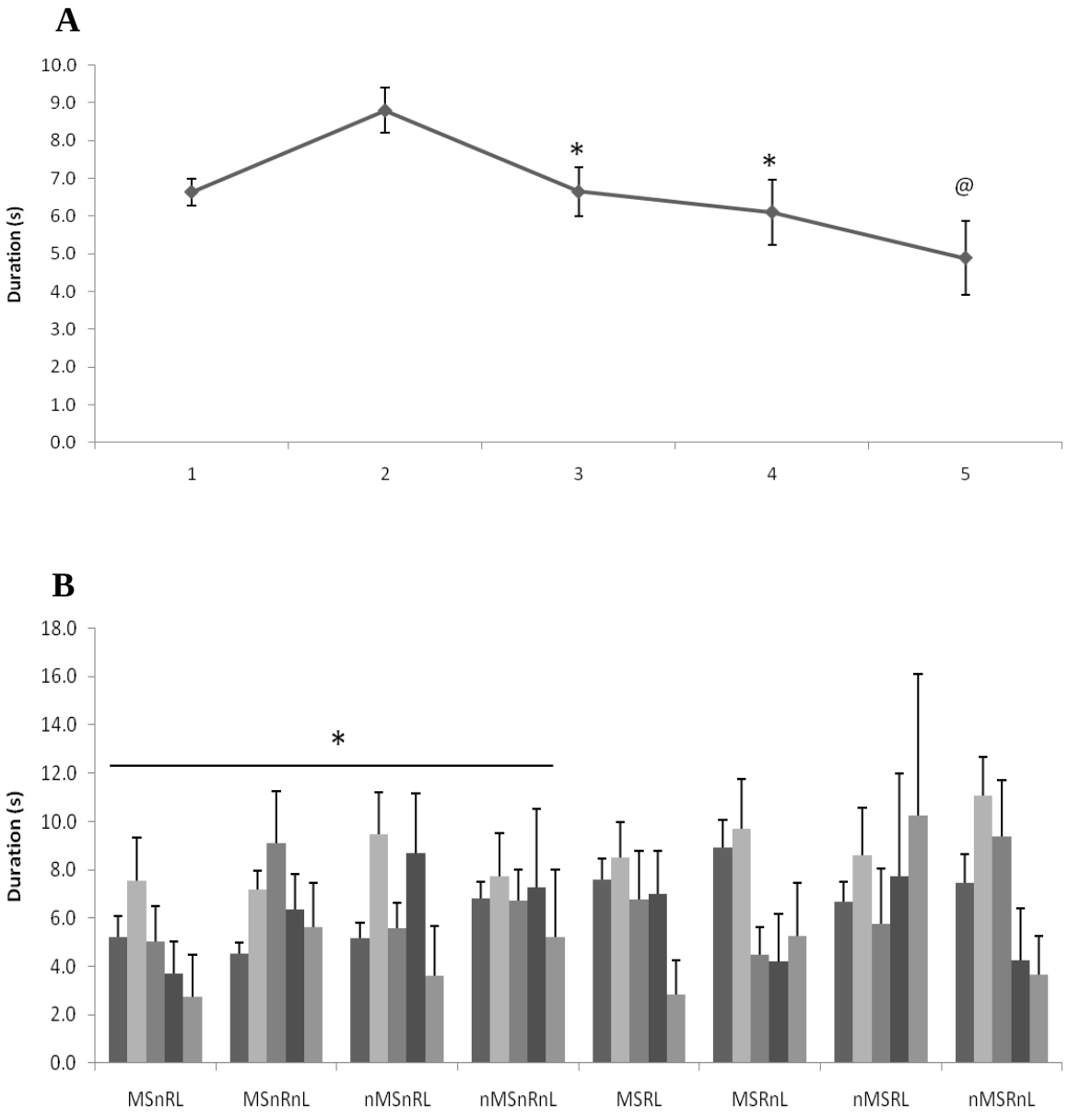

Figure 2.32 *Duration in the central square of the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: different from interval 2 *p<0.05; $^{@}$p<0.001. B) Intervals shown for all groups separately: nR < R *p<0.01 (1st interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

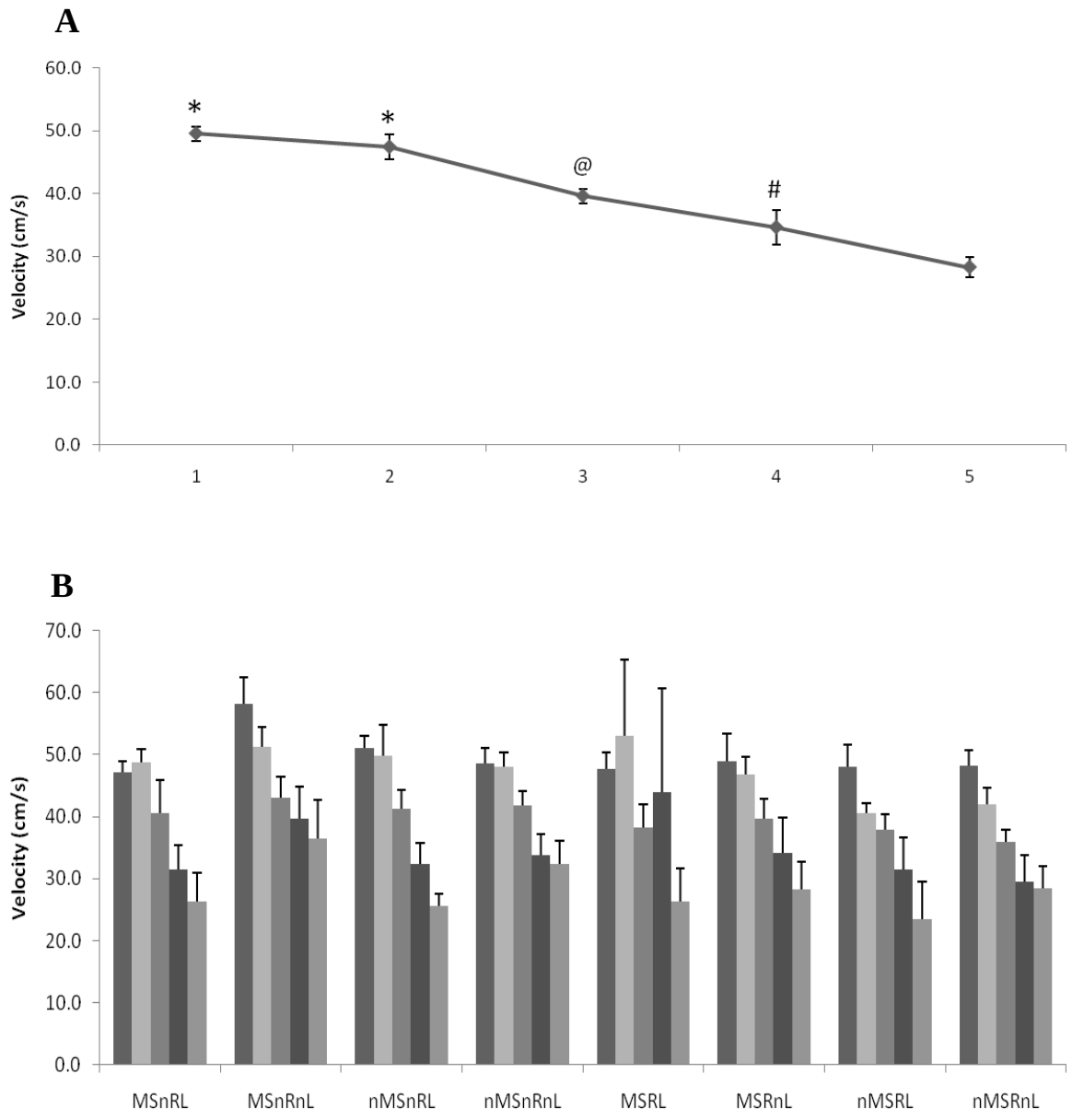

Figure 2.33 *Maximum velocity in the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > intervals 3-5, *p<0.001; interval > intervals 4, 5 $^{@}p<0.05$; interval > interval 5 $^{\#}p<0.01$. B) Intervals shown for all groups separately: no significant effects. Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

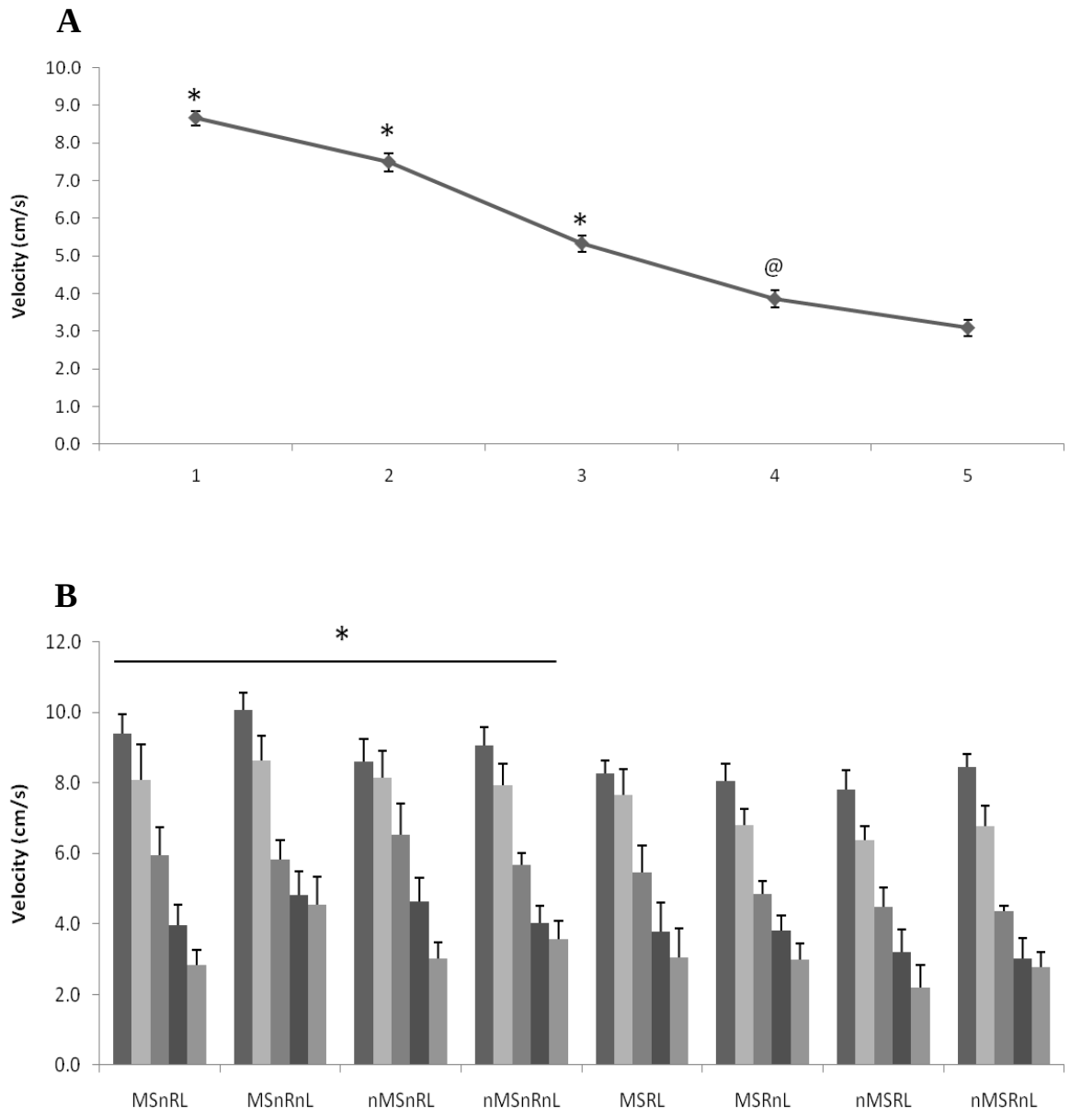

Figure 2.34 *Mean velocity in the elevated plus maze in consecutive 1 minute intervals on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals* $^{@}p<0.01$*; *p<0.001. B) Intervals shown for all groups separately: nR > R *p<0.05 (4th interval), p<0.01 (1st, 2nd, 3rd intervals). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

A significant effect of time was observed on duration in the closed arms ($F_{4,216}$ = 37.707, p = 0.000). Duration was significantly lower in the first interval than in all successive intervals (p < 0.01 in all cases), in the second interval than in all successive intervals (p < 0.001 in all cases) and in the third interval than in both successive intervals (p < 0.05 in both cases). *See Fig 2.31.*

A significant effect of time was observed on duration in the central square ($F_{4,216}$ = 3.934, p = 0.004). Duration was significantly higher in the second interval than in all successive intervals (p < 0.05 in all cases). *See Fig 2.32.*

A significant effect of time was observed on maximum velocity ($F_{4,216}$ = 37.358, p = 0.000). Maximum velocity was significantly greater in interval 1 than in each of intervals 3 to 5 (p < 0.000 in all cases), in interval 2 than in all successive intervals (p < 0.001 in all cases), in interval 3 than in intervals 4 and 5 (p < 0.05 in both cases) and in interval 4 than in interval 5 (p = 0.002). *See Fig 2.33.*

A significant effect of time was observed on mean velocity ($F_{4,216}$ = 193.721, p = 0.000). Mean velocity was significantly greater in interval 1 than in all successive intervals (p < 0.001 in all cases), in interval 2 than in all successive intervals (p < 0.001 in all cases), in interval 3 than in both successive intervals (p < 0.001 in both cases) and in interval 4 than in interval 5 (p = 0.001). *See Fig 2.34.*

2.2.2.3.2 P63

2.2.2.3.2.1 Full Five Minutes

A significant effect of MS was observed on distance travelled ($F_{1,53}$ = 5.035, p = 0.029). Post hoc tests showed that MS rats travelled a greater distance than non-MS rats. A significant

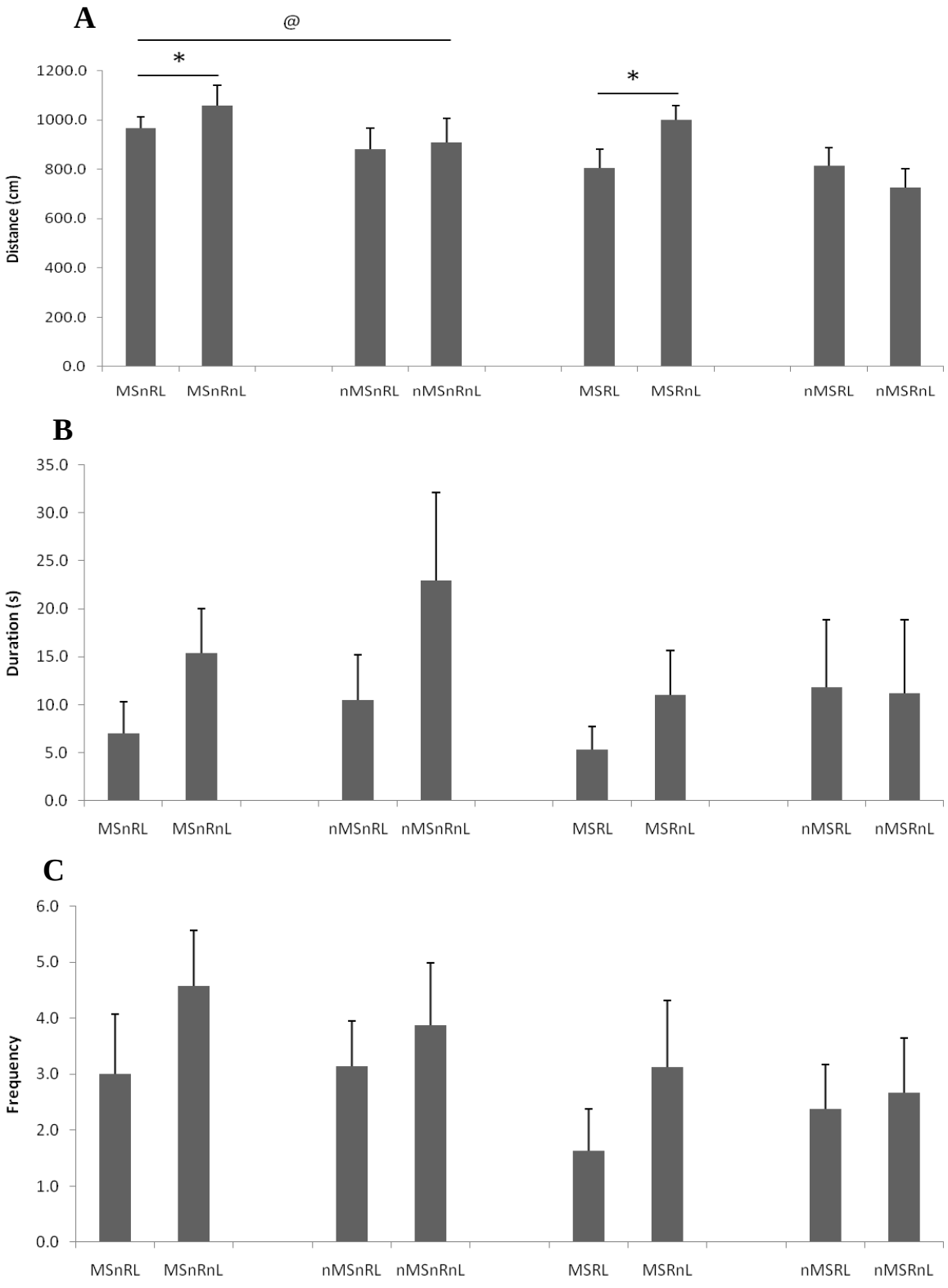

Figure 2.35 *Analysis of five minutes in the elevated plus maze on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: MS > nMS *p<0.05; nR > R, $^{@}p<0.05$. B) Duration in the open arms: no significant differences. C) Frequency of entry into the open arms: no significant differences.*

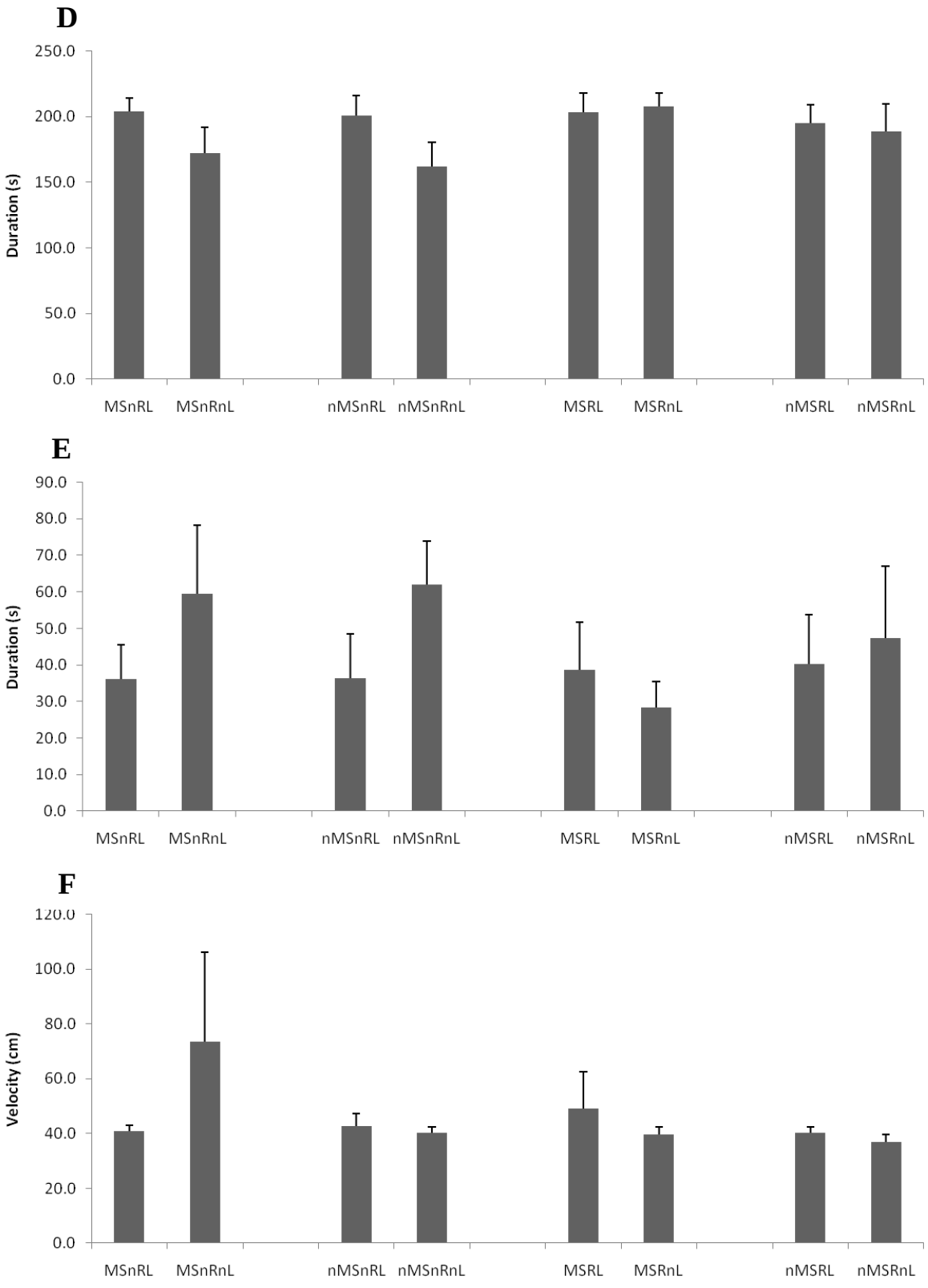

Figure 2.35 *cont. D) Duration in the closed arms: no significant effects. E) Duration in the central square: no significant effects. F) Maximum velocity: no significant effects.*

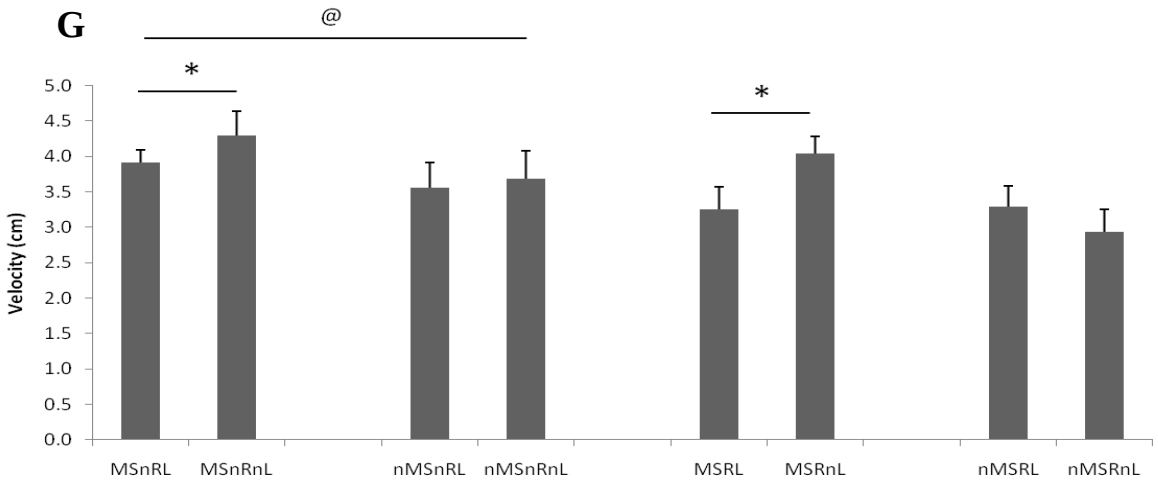

Figure 2.35 *cont. G) Mean velocity: MS > nMS *p<0.05; nR > R $^{@}$p<0.05. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

effect of exercise was also observed on distance travelled ($F_{1,53}$ = 4.513, p = 0.038), with runners travelling a shorter distance than non-runners. *See Fig 2.35A.*

A significant effect of MS was observed on mean velocity ($F_{1,53}$ = 5.063, p = 0.029), and post hoc tests showed that MS rats had a greater mean velocity than non-MS rats. A significant effect of exercise on mean velocity was also observed ($F_{1,53}$ = 4.542, p = 0.038). Post hoc tests showed that runners had a lower mean velocity than non-runners. *See Fig 2.35G.*

No significant differences were observed for any of the following parameters: duration in the open arms, frequency of entry into the open arms, duration in the closed arms, duration in the central square or maximum velocity. *See Fig 2.35B-F.*

2.2.2.3.2.2 One Minute Time-bins

a) Interval 1

A significant interaction was observed between MS and lesion for distance travelled ($F_{1,53}$ = 4.078, p = 0.049). Post hoc tests showed no significant individual group differences, but the trend was for the lesion to increase distance travelled in non-separated rats and reduce it in MS rats. A significant interaction between MS and lesion was also observed for mean velocity ($F_{1,53}$ = 4.078, p = 0.049); again, post hoc tests showed no significant individual group differences, but the trend was for the lesion to increase velocity in non-separated rats but reduce it in MS rats.

b) Interval 2

MS rats travelled a significantly greater distance than non-MS rats ($F_{1,53}$ = 7.379, p = 0.009); runners travelled a significantly shorter distance than non-runners ($F_{1,53}$ = 5.548, p = 0.022). A significant interaction was observed between exercise and lesion for duration in the closed arms ($F_{1,53}$ = 7.774, p = 0.007). Although post hoc tests revealed no significant individual group differences, the trend was for the lesion to increase closed arm duration in non-runners and reduce it in runners. A significant interaction between MS and exercise was observed for maximum velocity ($F_{1,53}$ = 4.283, p = 0.043). Again, no significant individual group differences were noted on post hoc analysis, but the trend was for exercise to reduce maximum velocity in non-separated rats and increase it in MS rats. MS significantly increased mean velocity ($F_{1,53}$ = 7.379, p = 0.009); exercise significantly reduced mean velocity ($F_{1,53}$ = 5.548, p = 0.022).

c) Interval 3

MS rats travelled a significantly greater distance than non-MS rats ($F_{1,53}$ = 4.348, p = 0.042); runners travelled a significantly reduced distance compared to non-runners ($F_{1,53}$ = 4.380). Similarly, mean velocity was increased in MS rats ($F_{1,53}$ = 4.348, p = 0.042) and reduced in runners ($F_{1,53}$ = 4.380, p = 0.041).

d) Interval 4

No significant effects were observed in interval four for any of the parameters analysed.

e) Interval 5

MS rats travelled a significantly greater distance than non-separated rats ($F_{1,53} = 6.406$, $p = 0.014$). MS rats also displayed a significantly greater maximum velocity ($F_{1,53} = 5.081$, $p = 0.028$) and mean velocity ($F_{1,53} = 6.406$, $p = 0.014$) than non-separated rats.

f) Comparison of the One Minute Intervals

Repeated measures ANOVA revealed a significant effect of time on distance travelled ($F_{4,208} = 235.716$, $p = 0.000$). Distance travelled was significantly greater in interval 1 than in all successive intervals ($p < 0.001$ in all cases), in interval 2 than in all successive intervals ($p < 0.001$) and in interval 3 than in both successive intervals ($p < 0.01$ in both cases). *See Fig 2.36.*

A significant effect of time was observed on duration in the open arms ($F_{4,208} = 3.751$, $p = 0.006$). Post hoc analysis showed that rats spent a significantly longer time in the open arms in interval 1 than in interval 4 ($p = 0.034$) and interval 5 ($p = 0.003$). *See Fig 2.37.*

A significant effect of time was observed on frequency of entry into the open arms ($F_{4,208} = 14.583$, $p = 0.000$). Frequency of entry was significantly greater in interval 1 than in all successive intervals ($p < 0.001$ in all cases) and in interval 2 than in interval 4 ($p = 0.035$). There was also a significant interaction between time, exercise and lesion ($F_{4,208} = 2.904$, $p = 0.023$). *See Fig 2.38.*

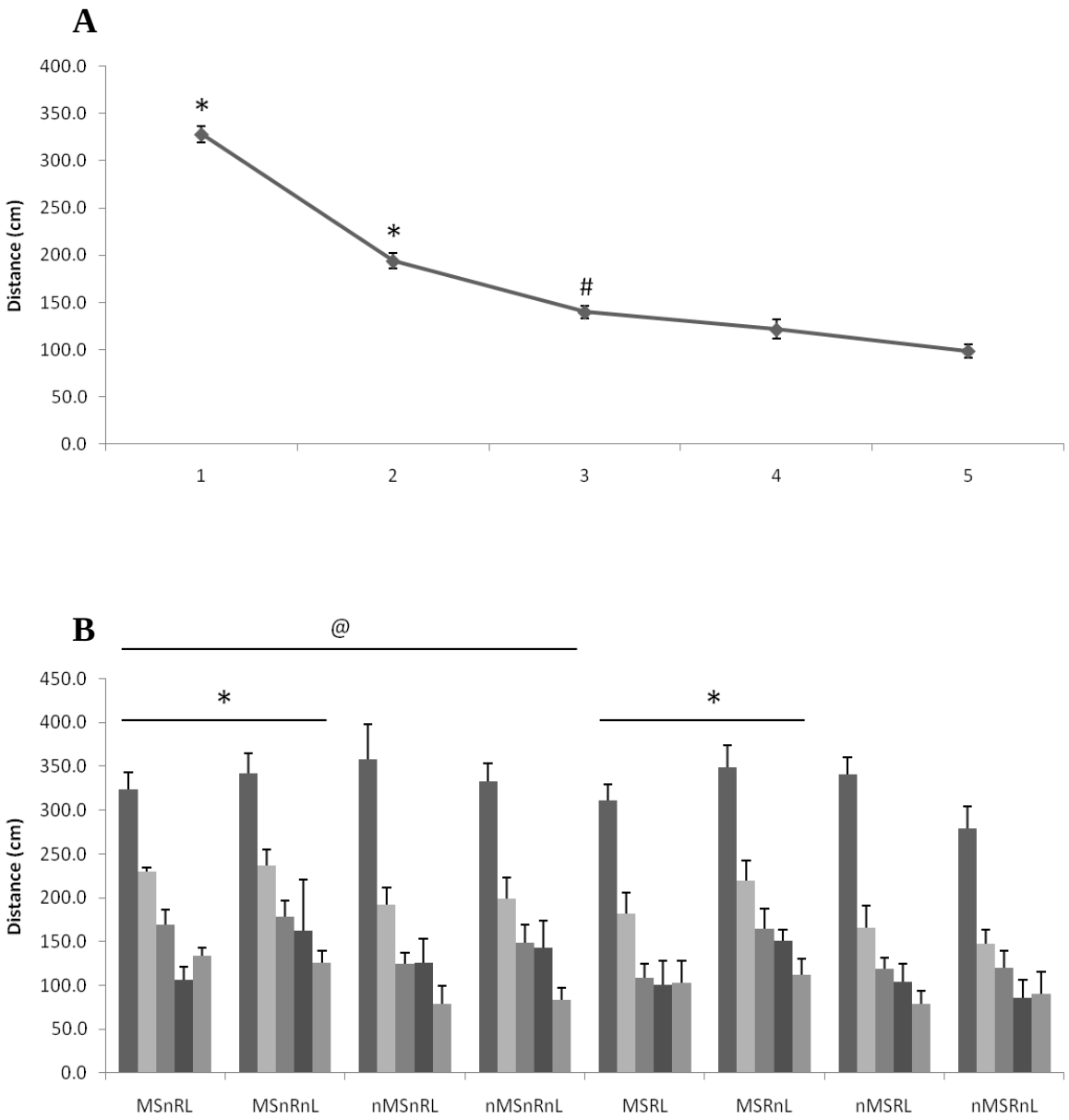

Figure 2.36 *Distance travelled in the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals $^{\#}p<0.01$; $*p<0.001$. B) Intervals shown for all groups separately: MS > nMS $*p<0.05$ (3^{rd} interval), $p<0.01$ (2^{nd}, 5^{th} intervals); nR > R $^{@}p<0.05$ (2^{nd}, 3^{rd} intervals); interaction between MS and R, $p<0.05$ (1^{st} interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

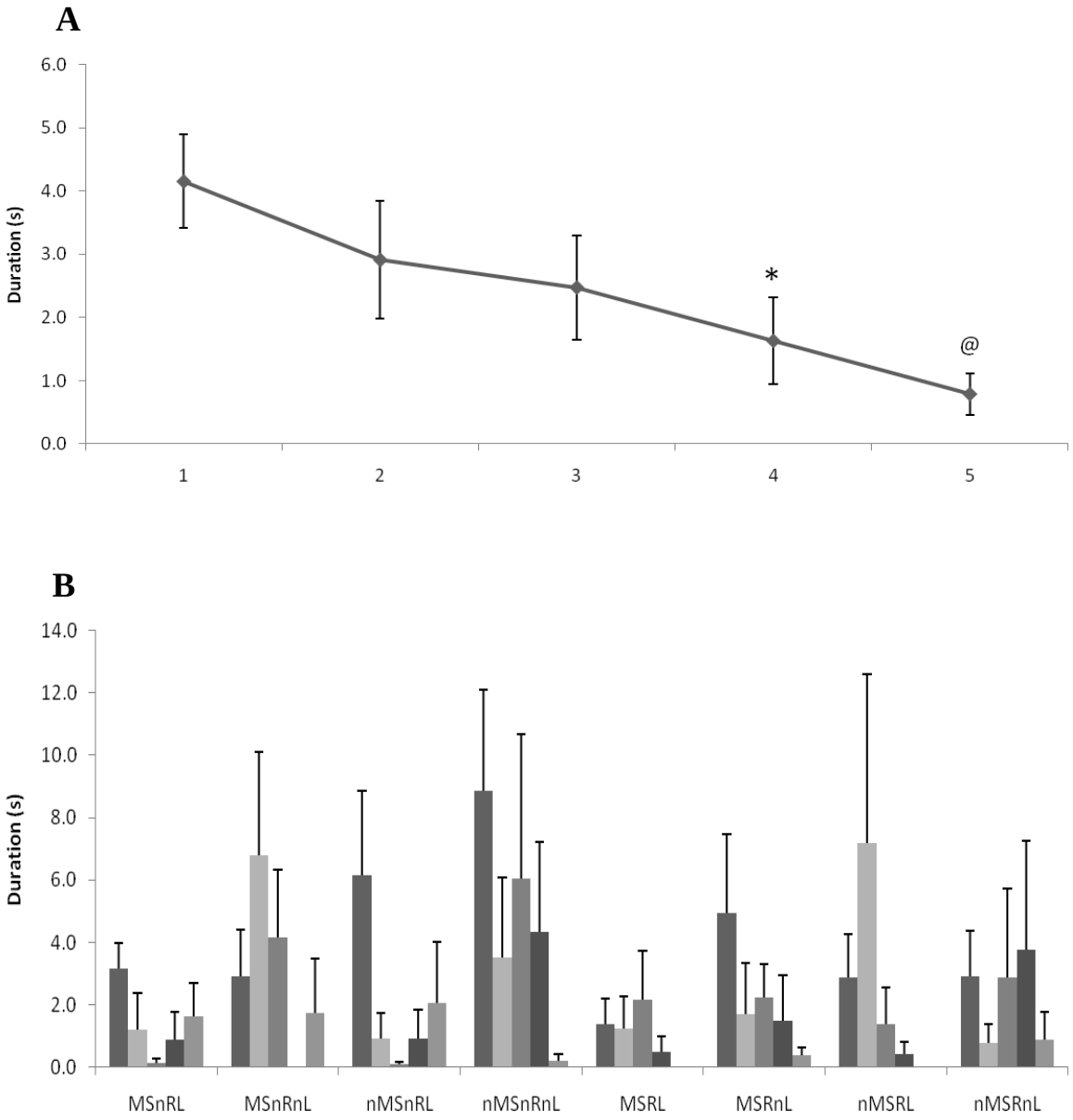

Figure 2.37 *Duration in the open arms of the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: Interval < interval 1 *p<0.05; $^{@}$p<0.01.B) Intervals shown for all groups separately: no significant effects. Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

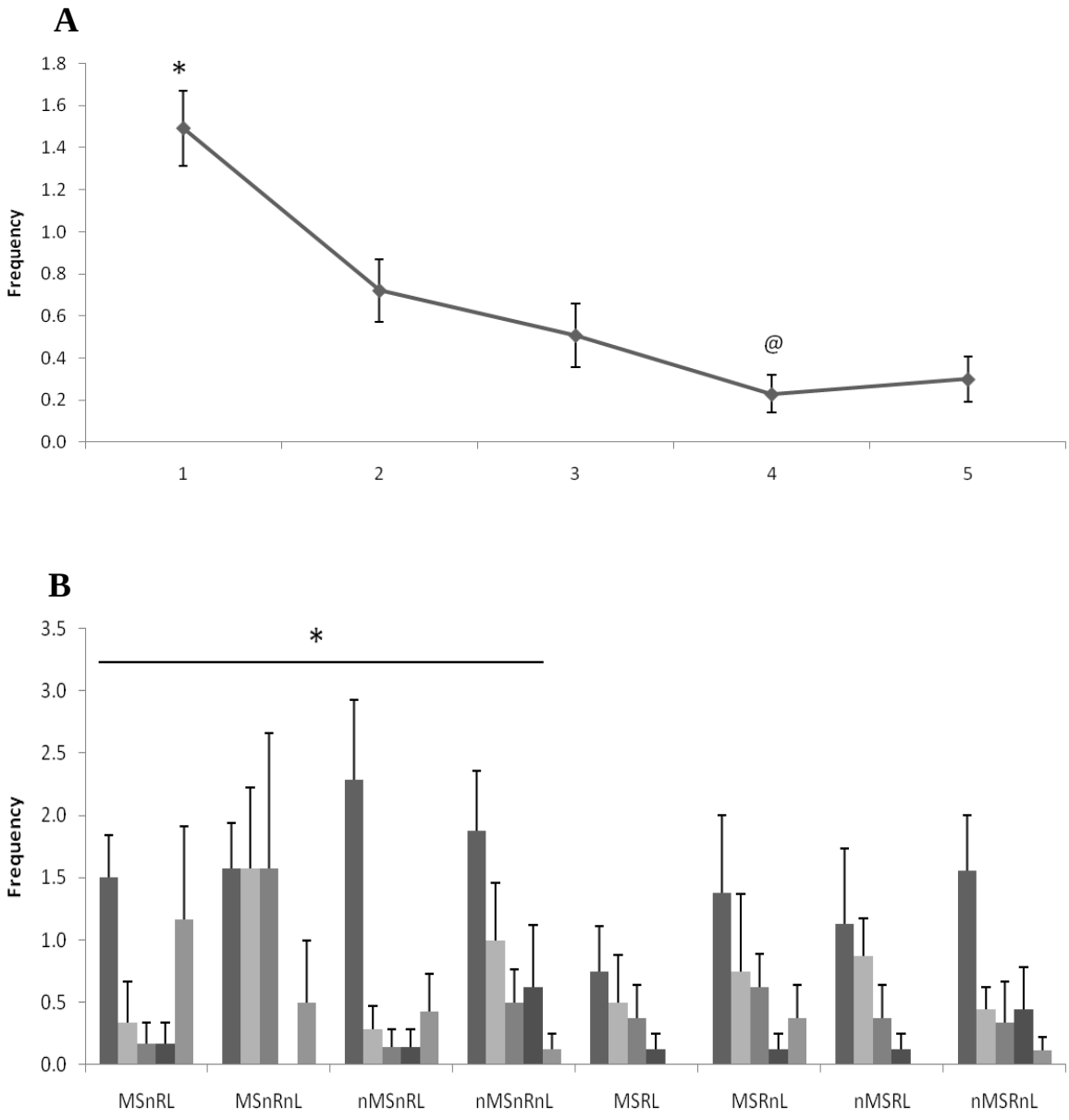

Figure 2.38 *Frequency of entry into the open arms of the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals *p<0.001; interval < interval 2 $^{@}p<0.05$. B) Intervals shown for all groups separately: nR > R *p<0.05 (5^{th} interval); interaction between time interval, R and L (p<0.05). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

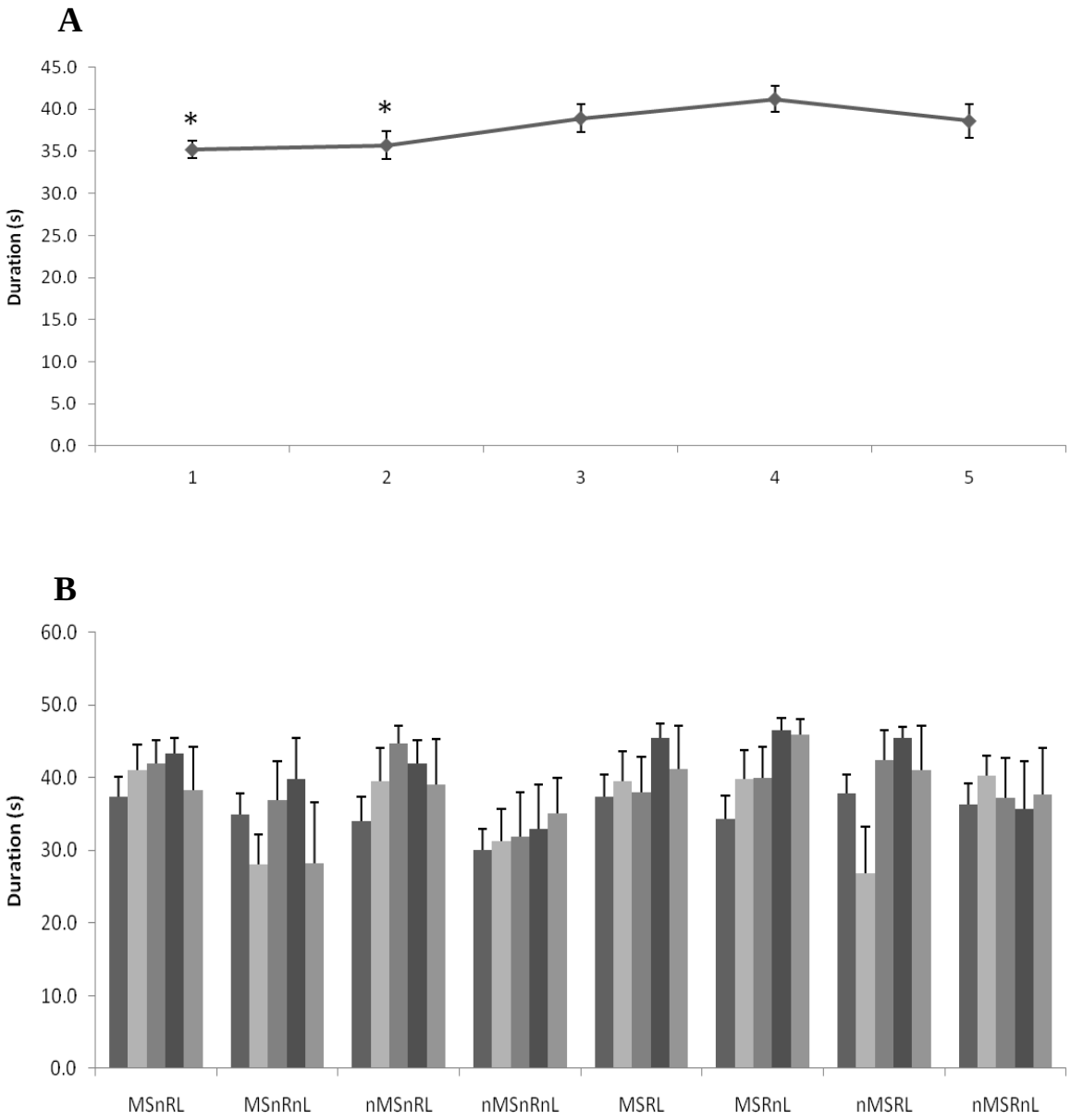

Figure 2.39 *Duration in the closed arms of the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: Interval < interval 4 *p<0.05. B) Intervals shown for all groups separately: interaction between R and L, p<0.01 (2nd interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

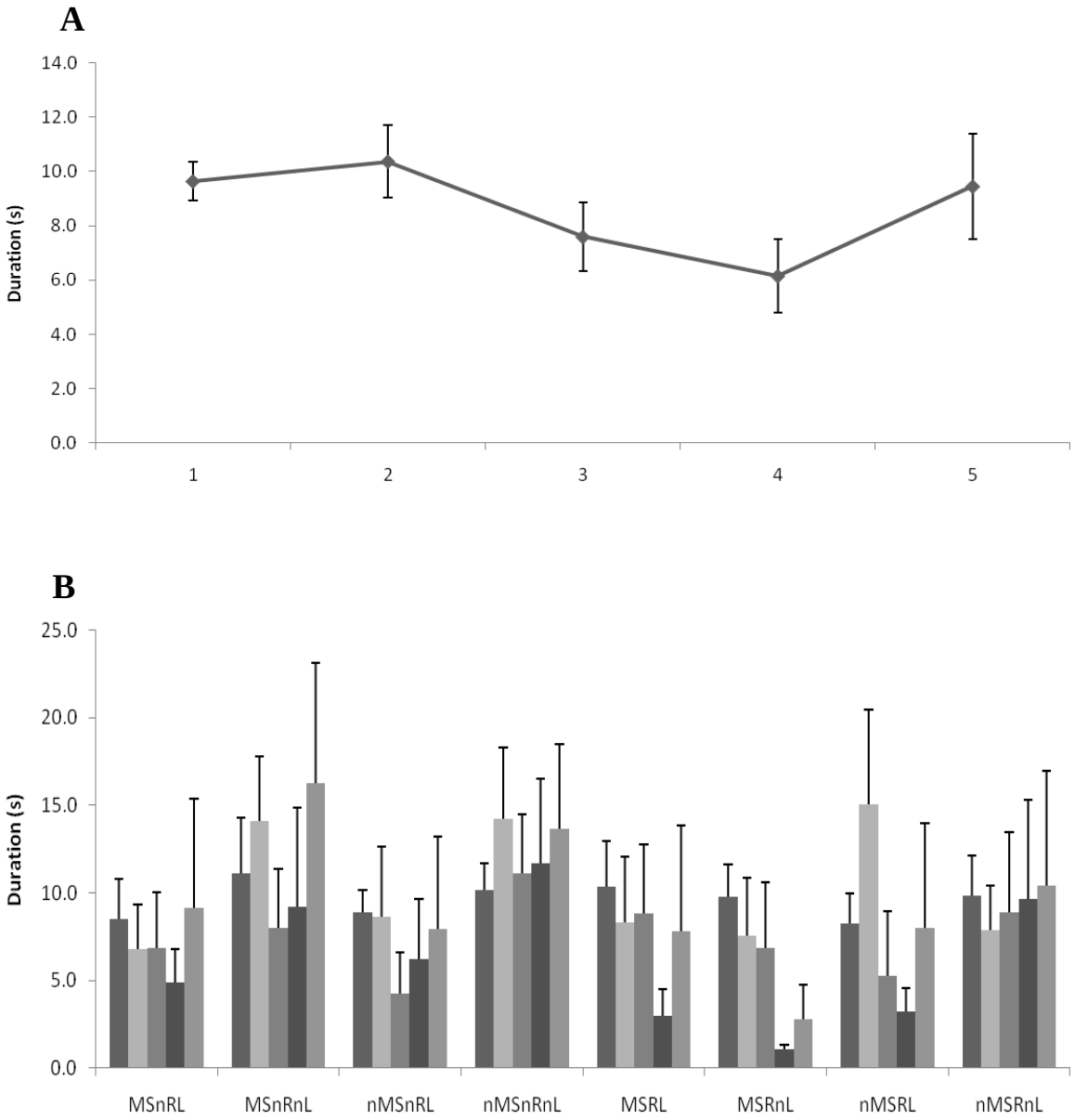

Figure 2.40 *Duration in the central square of the elevated plus maze in consecutive 1 minute intervals on P63 by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: main effect of Time, $p<0.05$. B) Intervals shown for all groups separately: no significant effects. Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

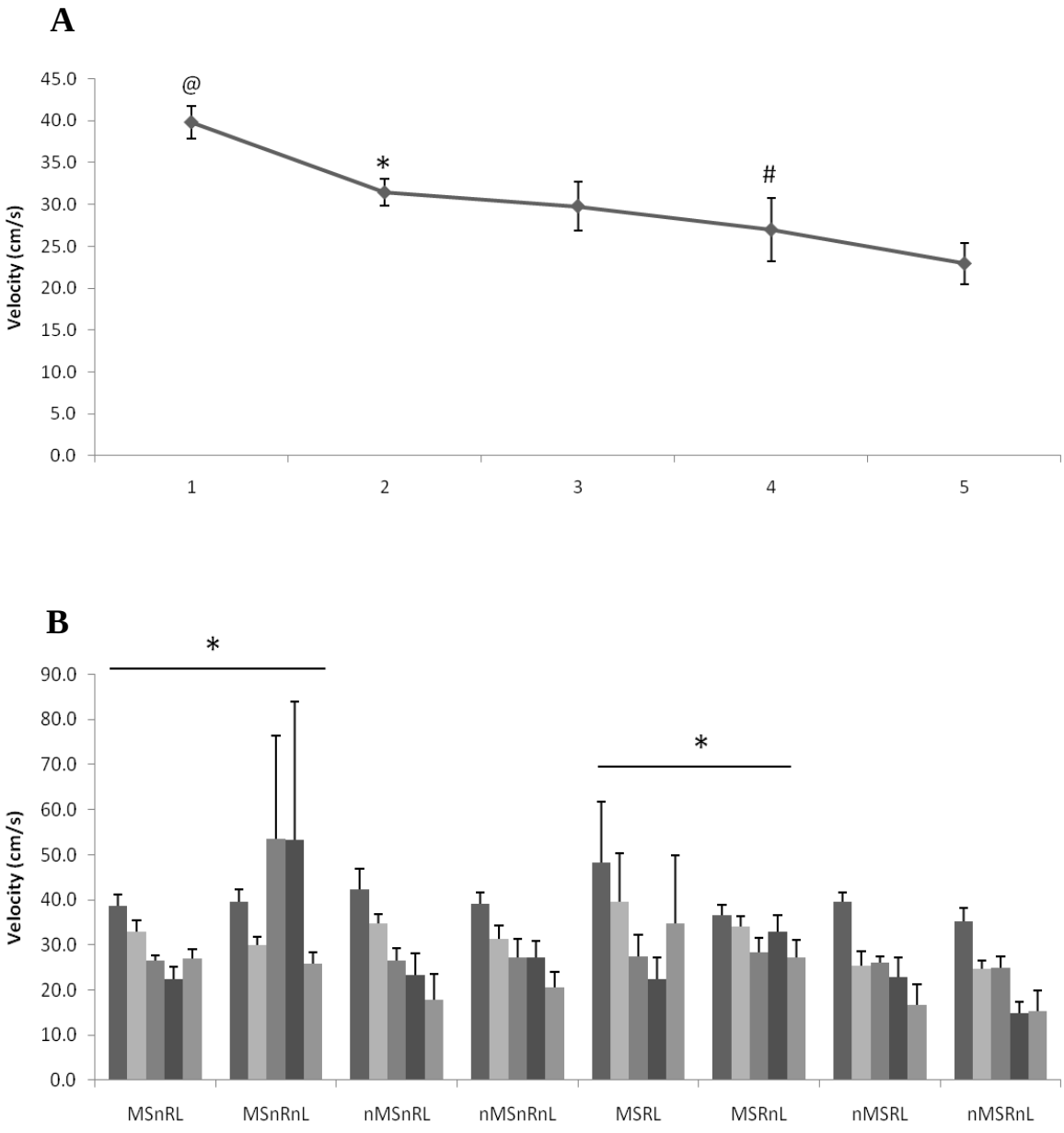

Figure 2.41 *Maximum velocity in the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals *p<0.05; $^{@}$p<0.001; interval <interval 3 $^{\#}$p<0.05. B) Intervals shown for all groups separately: MS > nMS *p<0.05 (5th interval); interaction between MS and R, p<0.05 (2nd interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

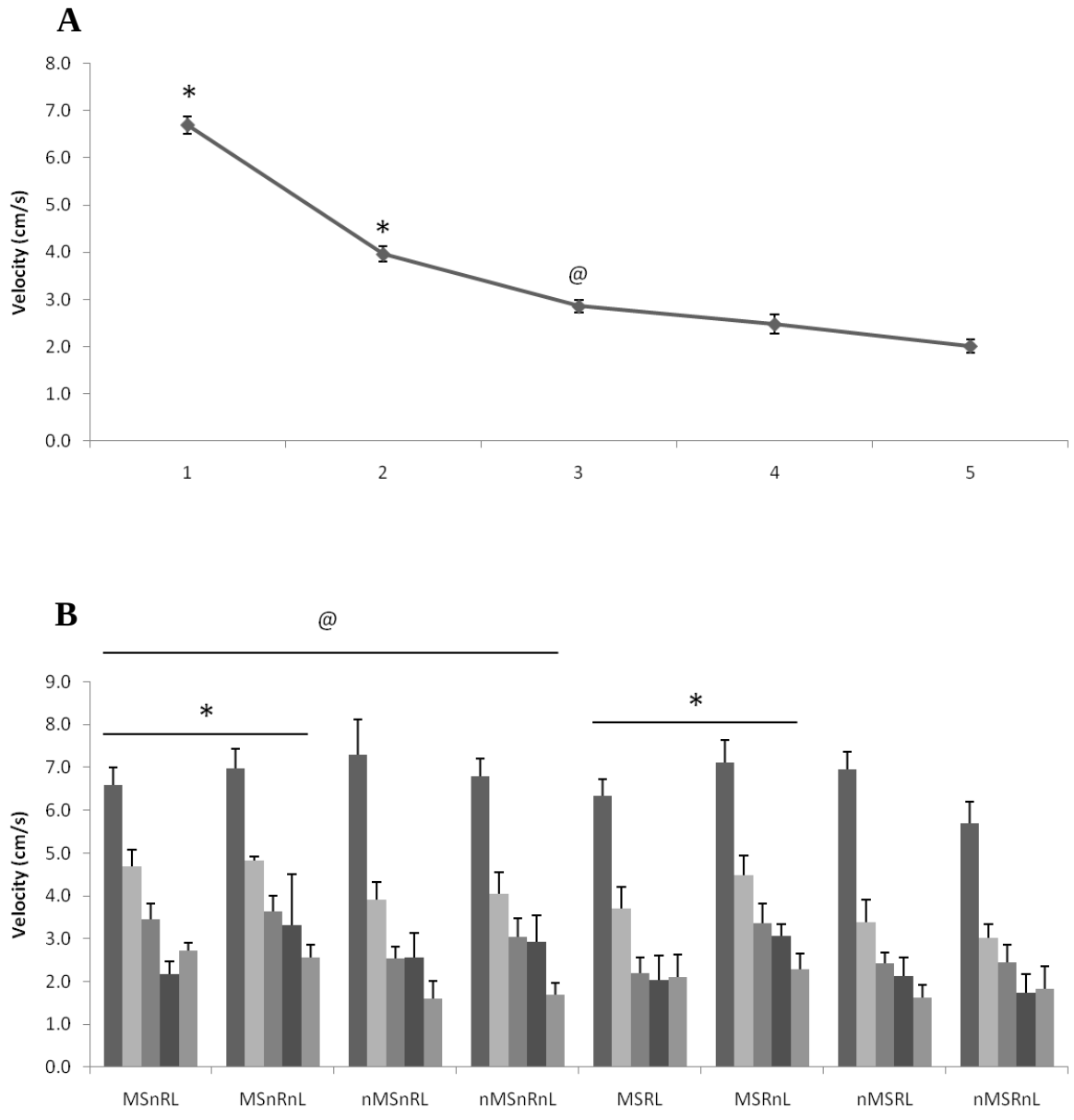

Figure 2.42 *Mean velocity in the elevated plus maze in consecutive 1 minute intervals on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Data collapsed across groups to show effects of time: interval > all successive intervals @p<0.01; *p<0.001. B) Intervals shown for all groups separately: MS > nMS *p<0.05 (3rd, 5th intervals), p<0.01 (2nd interval); nR > R @p<0.05 (2nd, 3rd intervals); interaction between MS and L, p<0.05 (1st interval). Data shown as Mean ± SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

A significant effect of time was observed on duration in the closed arms ($F_{4,208} = 3.628$, $p = 0.007$). Duration was significantly shorter in interval 1 than in interval 4 ($p = 0.011$) and in interval 2 than in interval 4 ($p = 0.017$). *See Fig 2.39.*

A significant effect of time was observed on duration in the central square ($F_{4,208} = 2.433$, $p = 0.049$) but post hoc analysis revealed no significant individual group differences. *See Fig 2.40.*

A significant effect of time was observed on maximum velocity ($F_{4,208} = 28.347$, $p = 0.000$). Maximum velocity in interval 1 was significantly greater than in all successive intervals ($p < 0.001$ in all cases), in interval 2 than in all successive intervals ($p < 0.05$) and in interval 3 than in interval 4 ($p = 0.048$). *See Fig 2.41.*

A significant effect of time was observed on mean velocity ($F_{4,208} = 235.716$, $p = 0.000$). Velocity was significantly greater in interval 1 than in all successive intervals ($p < 0.001$ in all cases), in interval 2 than in all successive intervals ($p < 0.001$ in all cases) and in interval 3 than in both successive intervals ($p < 0.01$ in both cases). *See Fig 2.42.*

2.2.2.3.3 Comparison of P49 and P63

2.2.2.3.3.1 Distance Travelled

Repeated measures ANOVA showed that rats travelled a significantly shorter distance on P63 than on P49 ($F_{1,52} = 151.945$, $p = 0.000$). Post hoc analysis revealed the following individual group differences: nMSnRnL P49 > P63 ($p = 0.000$); nMSnRL P49 > P63 ($p = 0.000$); nMSRnL P49 > P63 ($p = 0.002$); nMSRL P49 > P63 ($p = 0.045$); MSnRnL P49 > P63 ($p = 0.000$); MSnRL P49 > P63 ($p = 0.004$); MSRL P49 >P63 ($p = 0.000$). *See Fig 2.43A.*

2.2.2.3.3.2 Duration in the open arms

Rats spent a significantly shorter time in the open arms of the elevated plus maze on P63 than on P49 ($F_{1,52}$ = 57.164, p = 0.000). Post hoc analysis revealed that the only significant individual group difference was nMSnRL P49 > P63 (p = 0.046). *See Fig 2.43B.*

2.2.2.3.3.3 Frequency of entry into the open arms

There was a significantly lower frequency of entry into the open arms on P63 than on P49 ($F_{1,52}$ = 55.892, p = 0.000). Post hoc analysis showed no significant individual group differences. *See Fig 2.43C.*

2.2.2.3.3.4 Duration in the closed arms

There was no significant difference between P49 and P63 in time spent in the closed arms. *See Fig 2.43D.*

2.2.2.3.3.5 Duration in the central square

There was no significant difference between P49 and P63 in time spent in the central square. *See Fig 2.43E.*

2.2.2.3.3.6 Maximum velocity

Maximum velocity was significantly lower on P63 than on P49 ($F_{1,52}$ = 7.575, p = 0.008). Post hoc analysis revealed no significant individual group differences. *See Fig 2.43F.*

2.2.2.3.3.7 Mean velocity

Mean velocity was significantly lower on P63 than on P49 ($F_{1,52}$ = 147.952, p = 0.000). Post hoc analysis revealed the following significant individual group differences: nMSnRnL P49 > P63 (p = 0.001); nMSnRL P49 > P63 (p = 0.000); nMSRnL P49 > P63 (p = 0.003); nMSRL

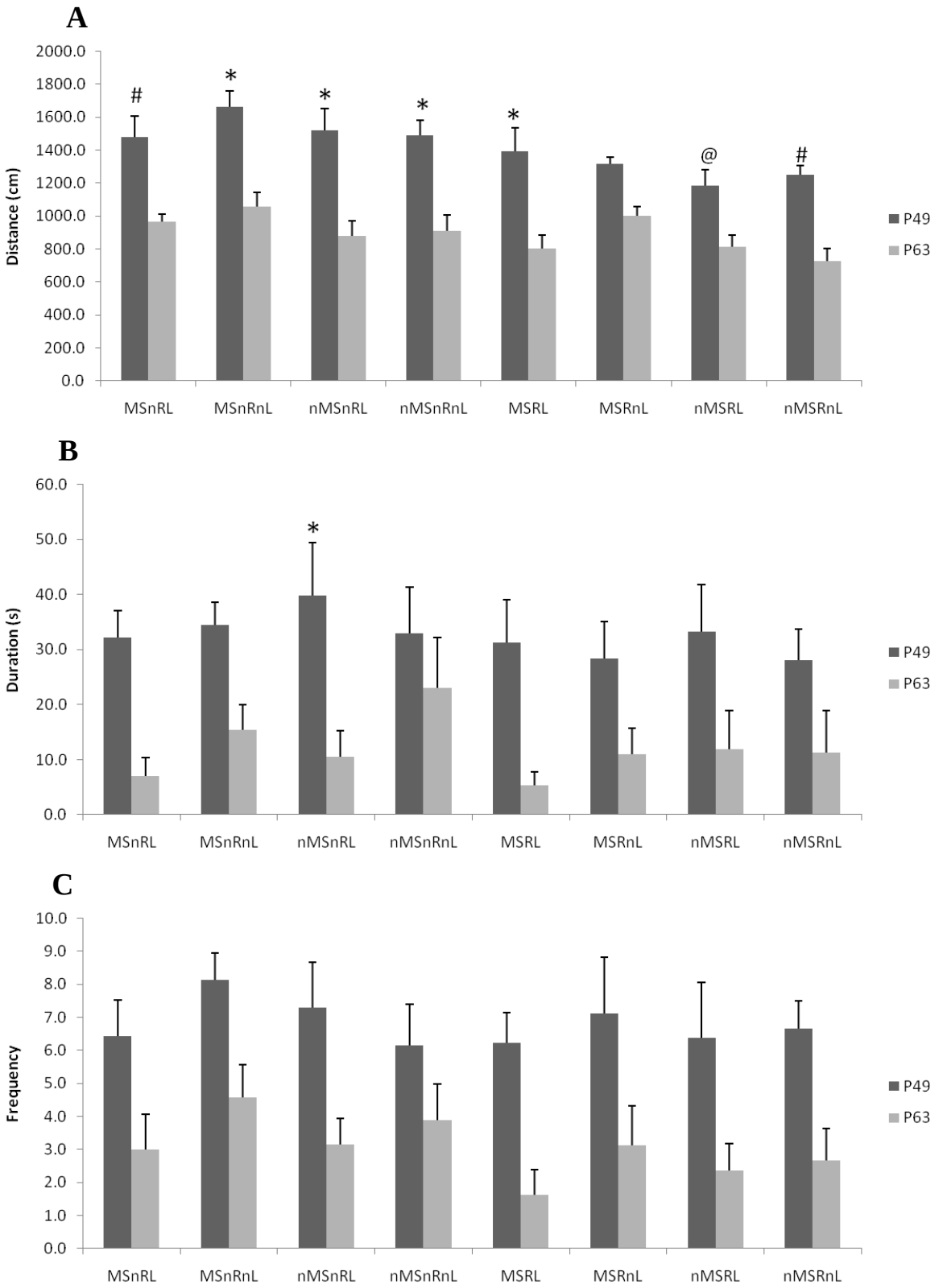

Figure 2.43 *Comparison of elevated plus maze behaviour on P49 and P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Distance travelled: P49 > P63 ($p<0.001$): $^{@}p<0.05$; $^{\#}p<0.01$; $^{*}p<0.001$. B) Duration in the open arms: P49 > P63 ($p<0.001$): $^{*}p<0.05$. C) Frequency of entry into the open arms: P49 > P63, $p<0.001$.*

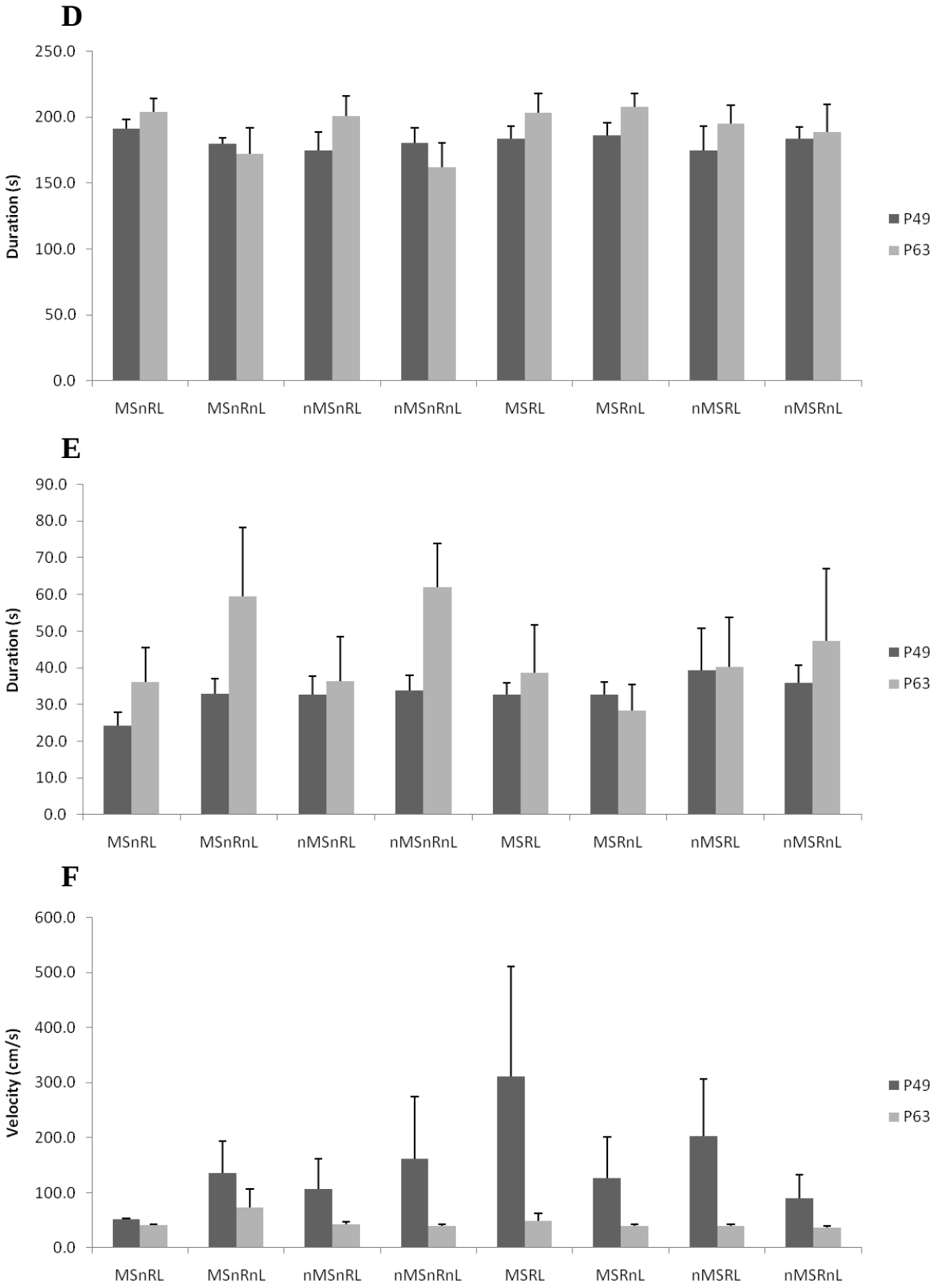

Figure 2.43 *cont. D) Duration in the closed arms: no significant effects. E) Duration in the central square: no significant effects. F) Maximum velocity: P49 > P63, $p<0.01$.*

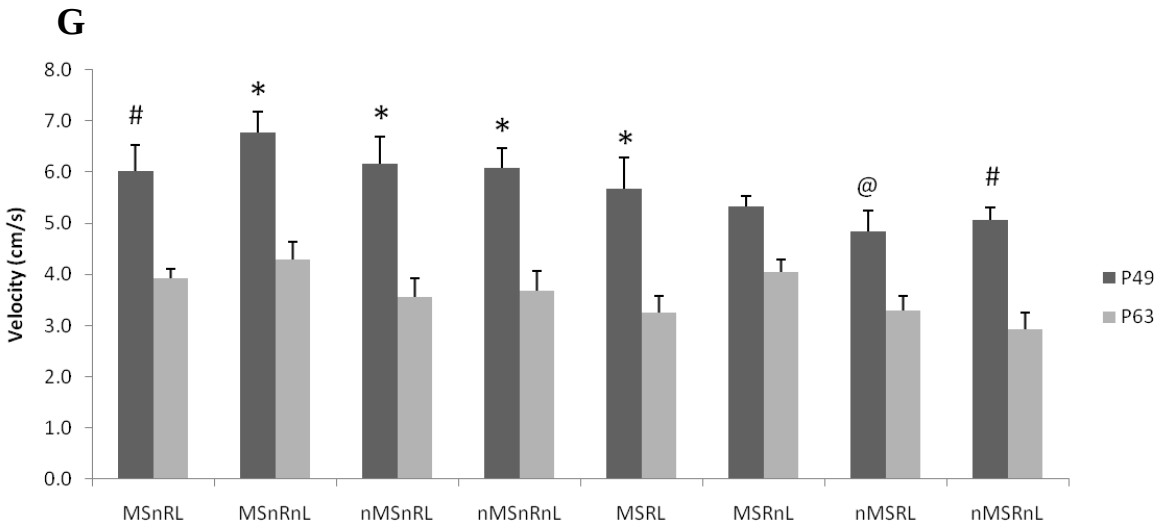

Figure 2.43 *cont. G) Mean velocity: P49 > P63 (p<0.001): [@]p<0.05; [#]p<0.01; *p<0.001. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

P49 > P63 (p = 0.046); MSnRnL P49 > P63 (p = 0.000); MSnRL P49 > P63 (p = 0.005); MSRL P49 > P63 (p = 0.000). *See Fig 2.43G.*

2.2.2.3.4 Analysis of Non-separated Rats Only

The effects of exercise were further investigated by excluding maternally separated rats.

2.2.2.3.4.1 P49

Runners travelled a significantly shorter distance in the elevated plus maze than non-runners ($F_{1,27}$ = 9.138, p = 0.005), and had a significantly lower mean velocity than non-runners ($F_{1,27}$ = 8.842, p = 0.006).

2.2.2.3.4.2 P63

There were no significant effects of running or lesion on elevated plus maze behaviour on P63.

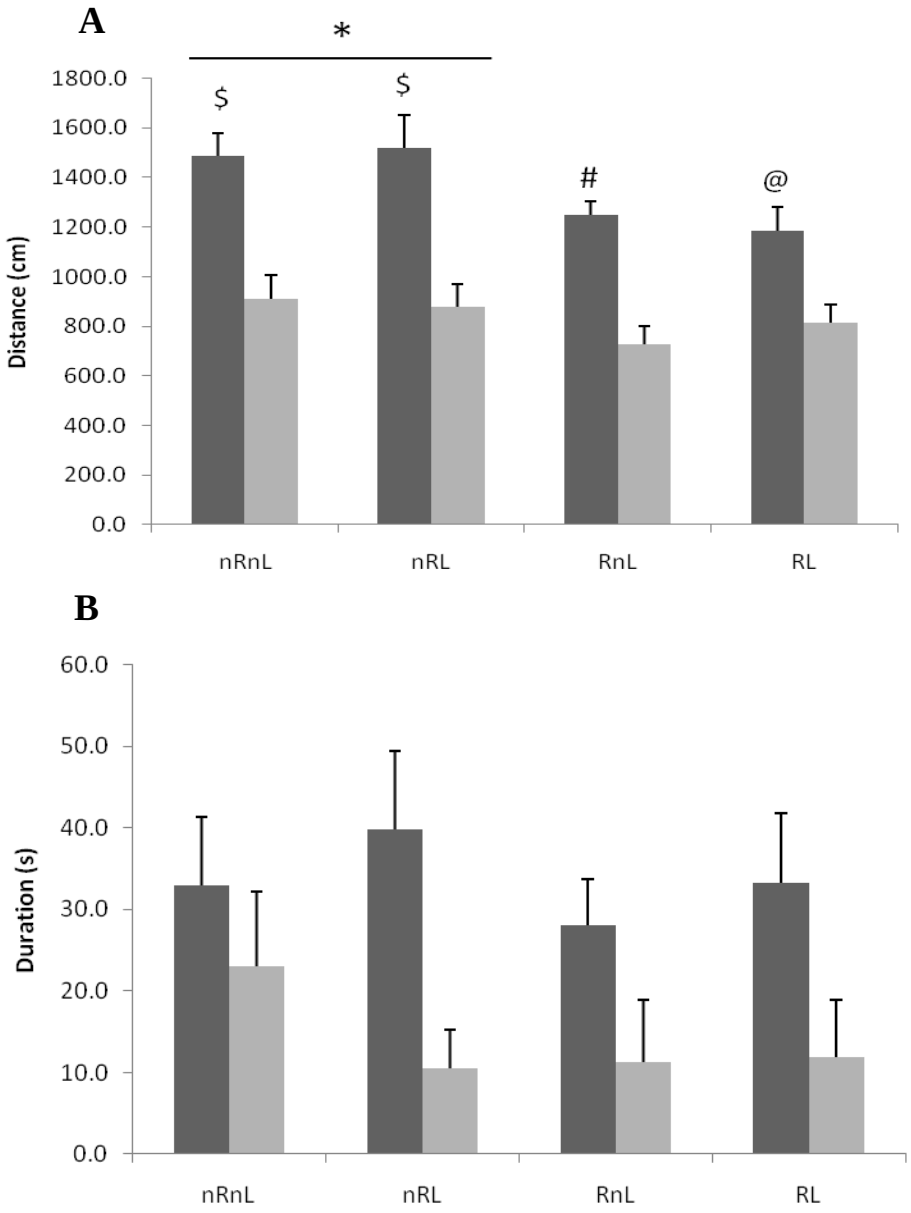

Figure 2.44 *Comparison of elevated plus maze behaviour on P49 and P63, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Distance travelled: nR > R *p<0.01 (P49 only); P49 > P63* $^{@}p<0.05$; $^{\#}p<0.01$; $^{\$}p<0.001$. *B) Duration in the open arms: P49 > P63, p<0.001.*

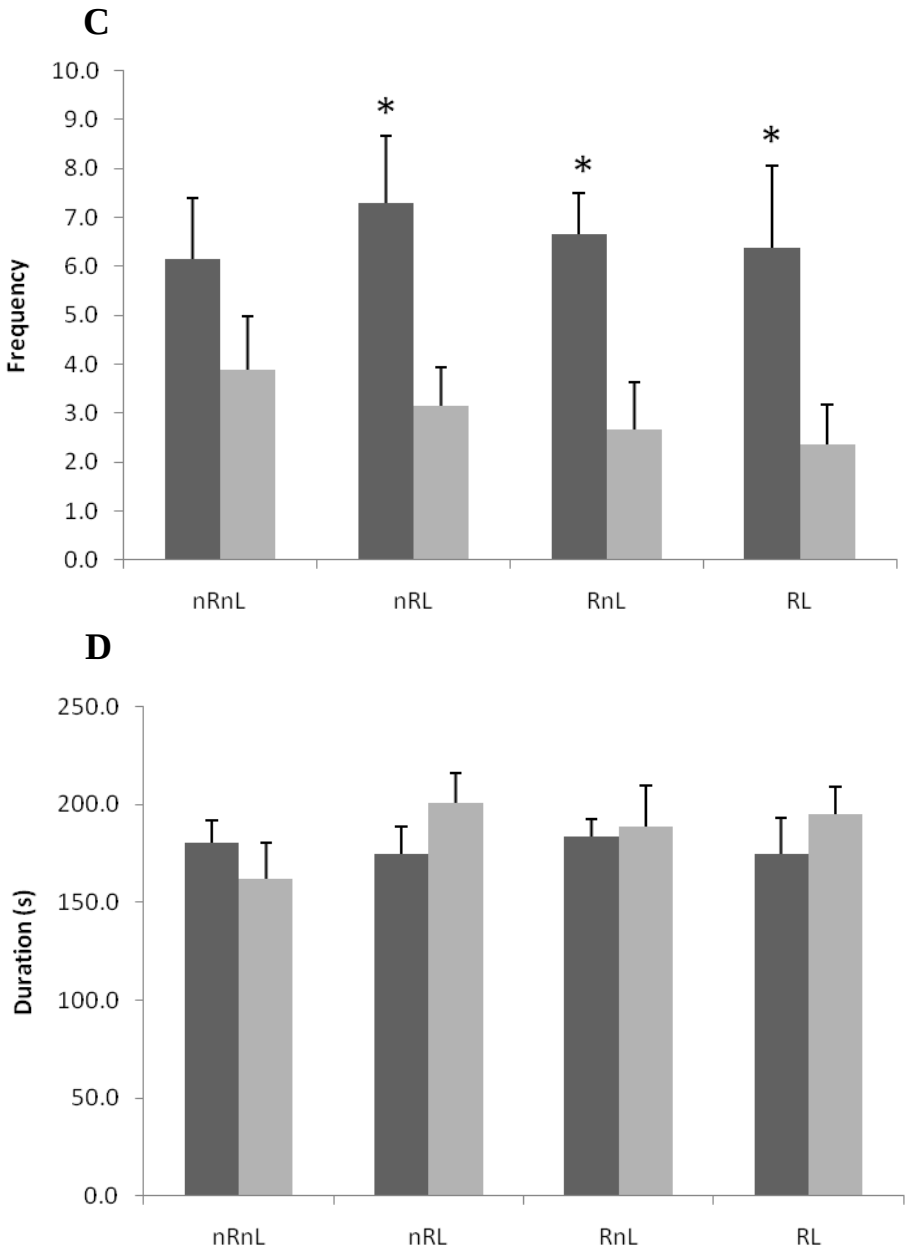

Figure 2.44 *cont. C) Frequency of entry into the open arms: P49 > P63 *p<0.05. D) Duration in the closed arms: no significant effects.*

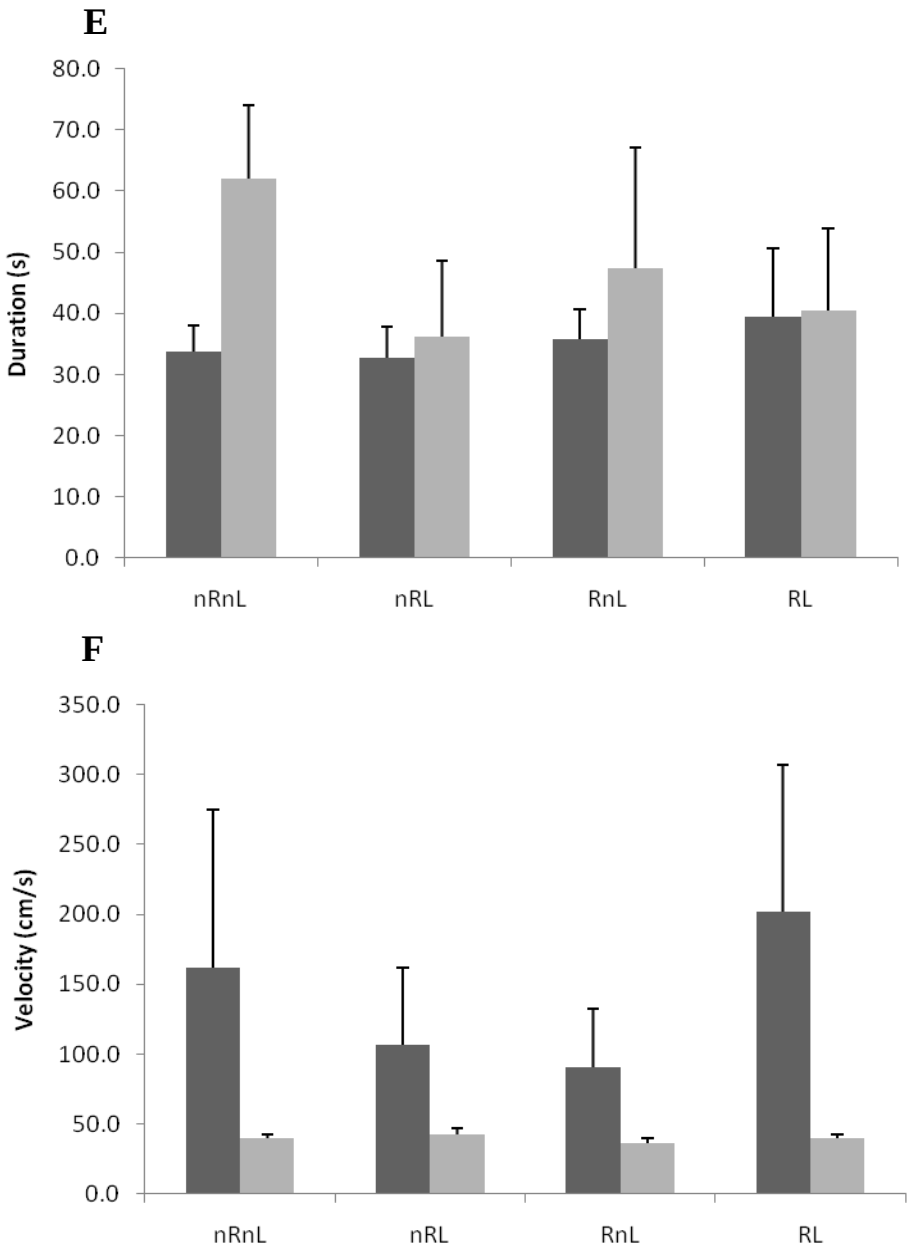

Figure 2.44 *cont. E) Duration in the central square: no significant effects. F) Maximum velocity: P49 > P63, $p<0.05$.*

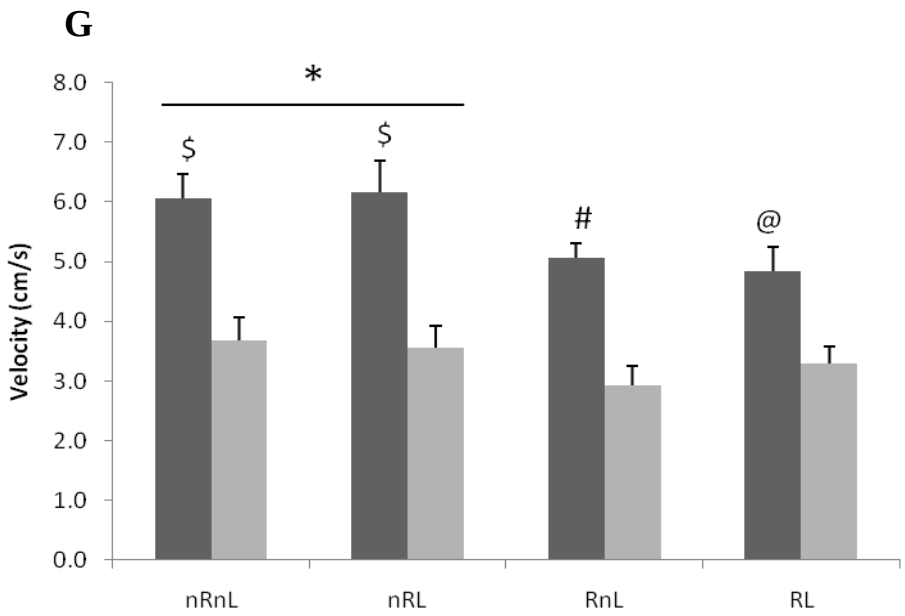

Figure 2.44 *cont. G) Mean velocity: nR > R *p<0.01 (P49 only); P49 > P63,* $^{@}$*p<0.05;* $^{\#}$*p<0.01;* $^{\$}$*p<0.001. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

2.2.2.3.4.3 Comparison of P49 and P63

Comparison of P49 and P63 by means of repeated measures ANOVA showed a significant effect of time on behaviour. Distance travelled was significantly shorter on P63 than on P49 ($F_{1,27}$ = 78.764, p = 0.000). Duration in the open arms was significantly shorter on P63 than on P49 ($F_{1,27}$ = 21.088, p = 0.000). Frequency of entry into the open arms was significantly lower on P63 than on P49 ($F_{1,27}$ = 36.749, p = 0.000). Maximum velocity was significantly lower on P63 than on P49 ($F_{1,27}$ = 5.888, p = 0.022), as was mean velocity ($F_{1,27}$ = 76.795, p = 0.000). *See Fig 2.44.*

2.2.2.4 CYLINDER TEST

The following parameters were analysed in the "cylinder test" of forelimb asymmetry: percentage (%) left limb use, % time spent grooming of total time spent in the cylinder, total

number of rears, total number of steps (left paw + right paw + both paws together), total number of movements (rears + steps). Results were analysed by means of factorial ANOVA, and behaviour on P49 and P63 was compared by means of repeated measures ANOVA. Significant results ($p < 0.05$) was further analysed by means of post hoc Newman Keuls tests. *See appendix A5.1.6.*

2.2.2.4.1 P49

2.2.2.4.1.1 Percentage Left Limb Use

A significant effect of the lesion was observed on % left limb use ($F_{1,52} = 31.713$, $p = 0.000$). Post hoc analysis showed that lesioned rats had a significantly greater % left limb use in the cylinder than non-lesioned rats. Significant individual group differences were as follows: nMSnRnL < nMSRL ($p = 0.014$); nMSnRL > nMSRnL ($p = 0.047$) and > MSnRnL ($p = 0.022$); nMSRL > nMSRnL ($p = 0.019$); MSnRnL < nMSRL ($p = 0.017$); MSRnL < nMSRL ($p = 0.021$). *See Fig 2.45A.*

2.2.2.4.1.2 Percentage Time Spent Grooming

No significant effects were observed on grooming time. *See Fig 2.45B.*

2.2.2.4.1.3 Total Rearing

A significant effect of exercise was observed on total number of rears ($F_{1,52} = 32.243$, $p = 0.000$). Post hoc analysis showed that runners reared significantly fewer times than non-runners. Significant individual group differences were as follows: nMSnRnL > MSRL ($p = 0.044$); nMSnRL > nMSRL ($p = 0.031$) and > MSRL ($p = 0.004$); nMSRnL < MSnRnL ($p =$

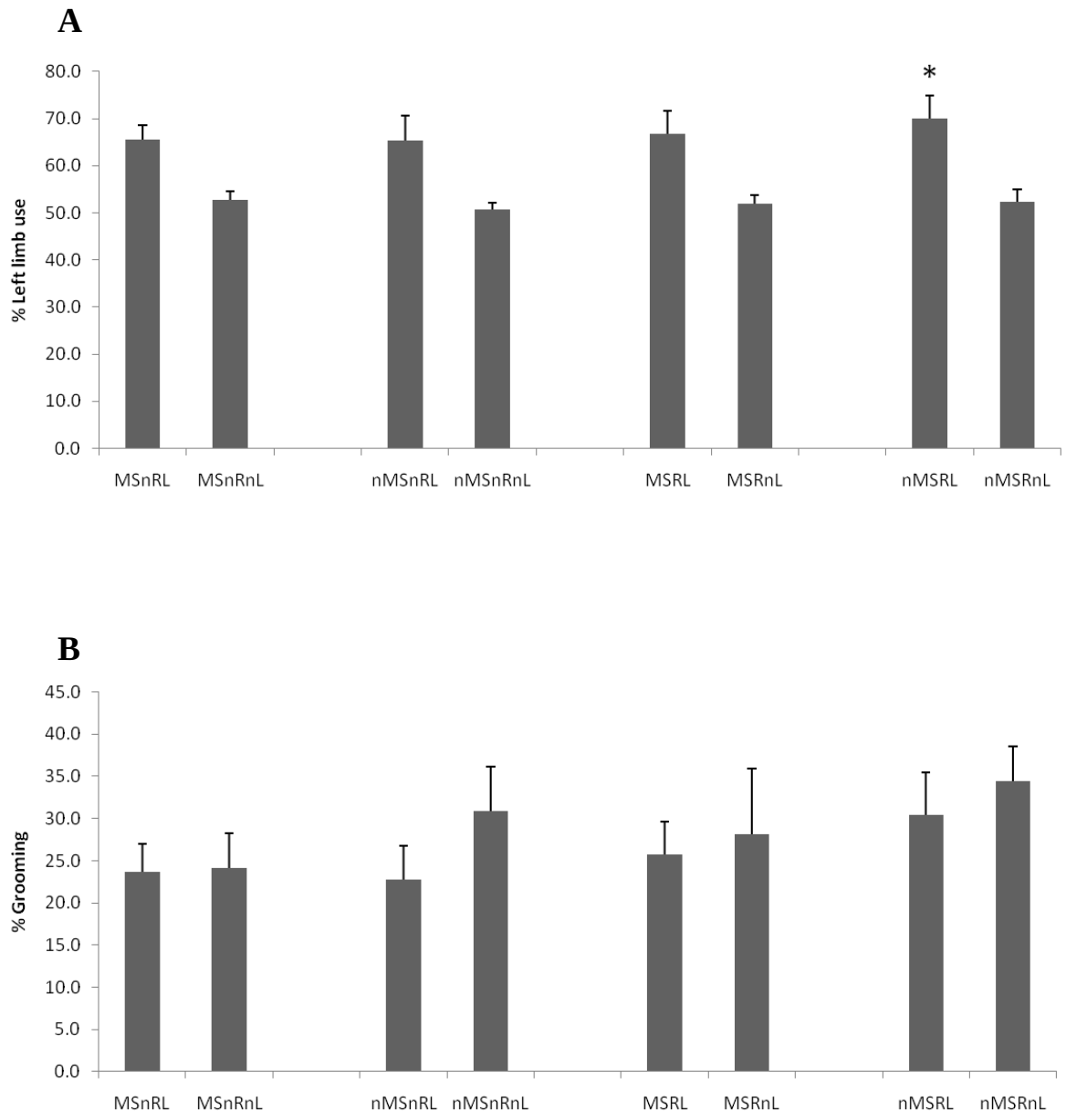

Figure 2.45 *Analysis of forelimb asymmetry by means of a ten-minute "cylinder test" on P49, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Percentage use of the left limb: L > nL ($p<0.001$) *$p<0.05$. B) Percentage time spent grooming of total time: no significant effects.*

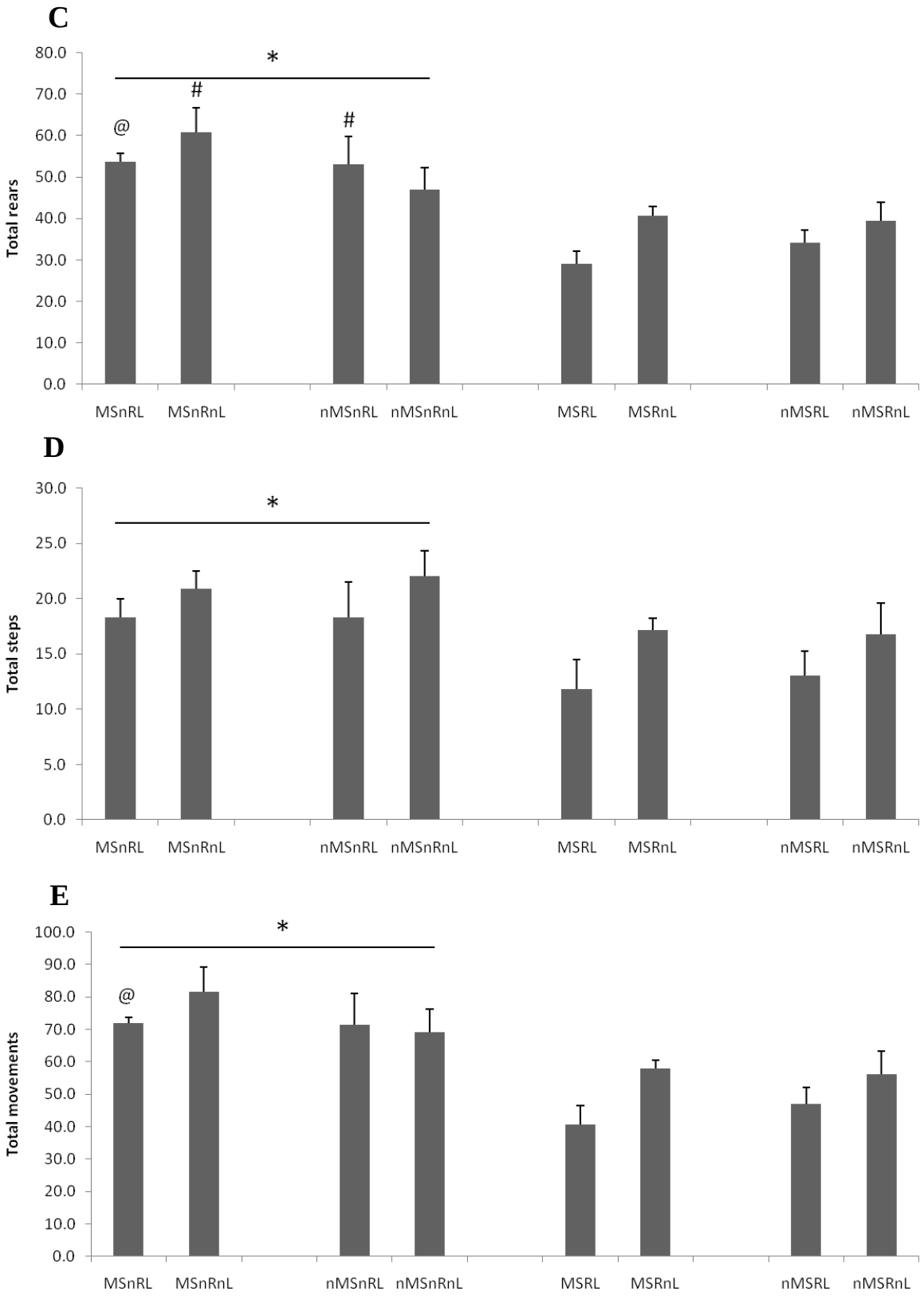

Figure 2.45 *cont. C) Total number of rearing movements: nR > R *p<0.001: $^{\#}$p<0.05, $^{@}$p<0.01. D) Total number of stepping movements: nR > R, *p<0.01, nL > L, p<0.05. E) Total movements: nR > R, *p<0.001: $^{@}$p<0.05. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

0.016); nMSRL < MSnRnL (p = 0.002) and < MSnRL (p = 0.033); MSnRnL > MSRnL (p = 0.019) and > MSRL (p = 0.000); MSnRL > MSRL (p = 0.004). *See Fig 2.45C.*

2.2.2.4.1.4 Total Stepping

A significant effect of exercise was observed on total stepping ($F_{1,52}$ = 9.130, p = 0.004). Post hoc analysis showed that runners made significantly fewer steps than non-runners. A significant effect of lesion was also observed ($F_{1,52}$ = 5.003, p = 0.030), and post hoc analysis showed that lesioned rats made significantly fewer steps than non-lesioned rats. There were no significant individual group differences. *See Fig 2.45D.*

2.2.2.4.1.5 Total movements

A significant effect of exercise was observed on total movements ($F_{1,52}$ = 24.796, p = 0.000). Post hoc analysis showed that runners made significantly fewer total movements than non-runners. Significant individual group differences were as follows: nMSnRnL > MSRL (p = 0.028); nMSnRL > MSRL (p = 0.020); nMSRL < MSnRnL (p = 0.008); MSnRnL > MSRL (p = 0.001); MSnRL > MSRL (p = 0.022). *See Fig 2.45E.*

2.2.2.4.2 P63

2.2.2.4.2.1 Percentage Left Limb Use

A significant effect of lesion was observed on % left limb use ($F_{1,54}$ = 30.377, p = 0.000). Post hoc analysis revealed that lesioned rats had a significantly greater percentage use of the left limb than non-lesioned rats. Significant individual group differences were as follows: nMSnRnL < nMSRL (p = 0.001) and < MSRL (p = 0.001); nMSRnL < nMSRL (p = 0.016) and < MSRL (p = 0.022); nMSRL > MSnRnL (p = 0.039) and > MSRnL (p = 0.006); MSRnL < MSRL (p = 0.008). *See Fig 2.46A.*

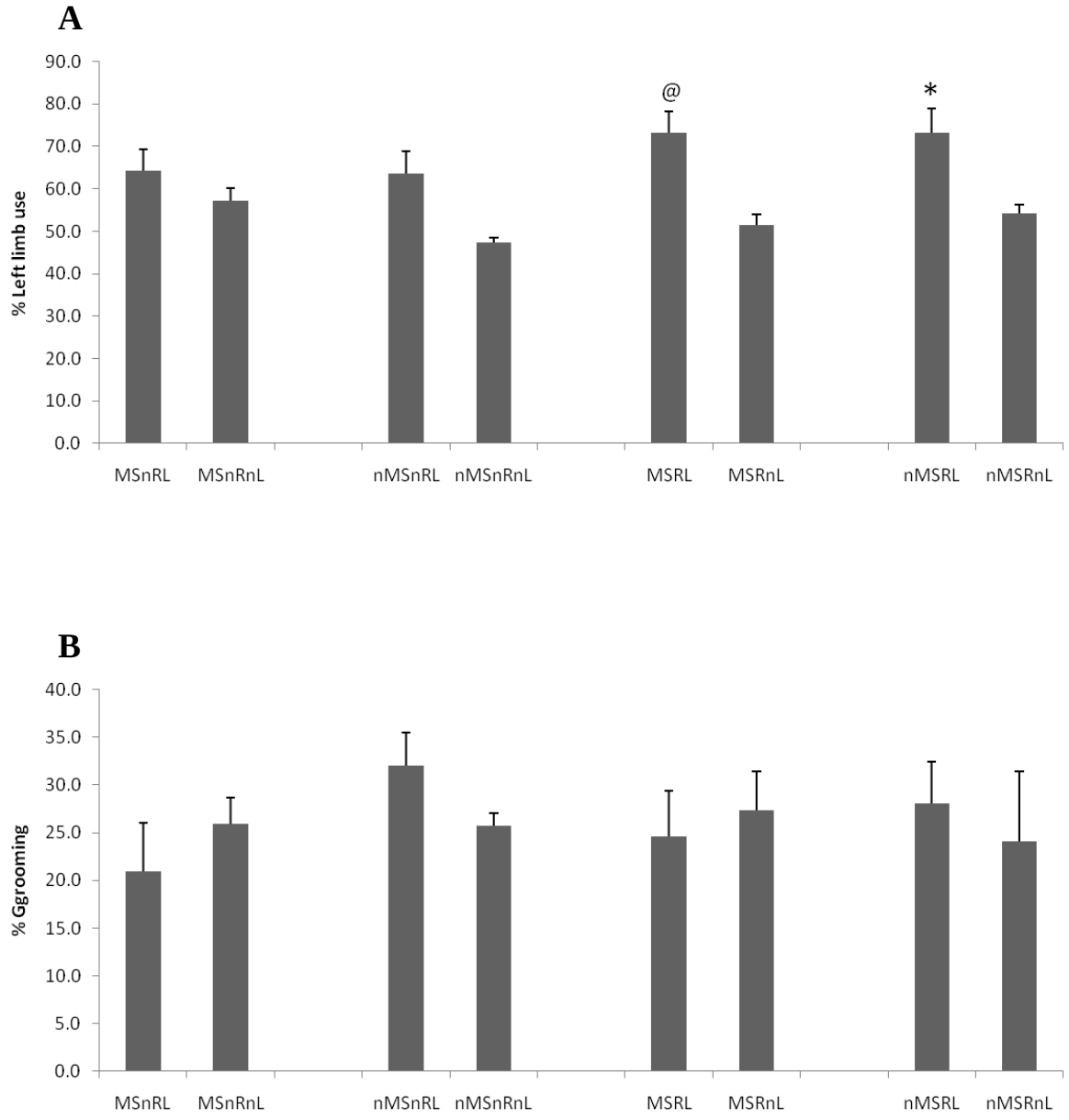

Figure 2.46 *Analysis of forelimb asymmetry by means of a ten-minute "cylinder test" on P63, by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Percentage use of the left limb: L > nL ($p<0.01$): *$p<0.05$, $^{@}p<0.01$. B) Percentage time spent grooming of total time: no significant effects.*

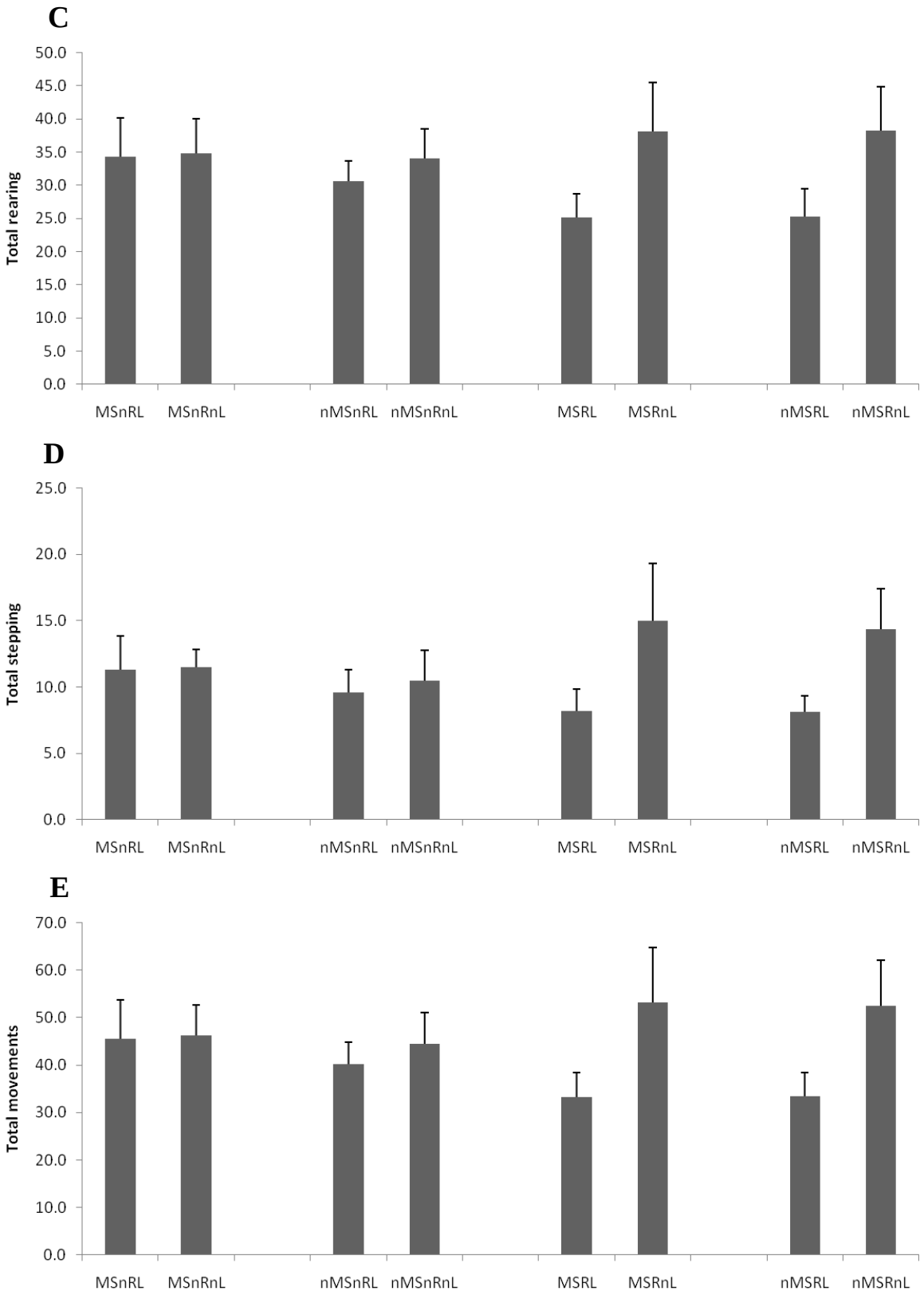

Figure 2.46 *cont. C) Total number of rearing movements: no significant effects. D) Total number of stepping movements: no significant effects. E) Total movements: L < nL, $p<0.05$. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

2.2.2.4.2.2 Percentage Time Spent Grooming

No significant effects were observed on grooming time. *See Fig 2.46B.*

2.2.2.4.2.3 Total Rearing

No significant effects were observed on total rearing. *See Fig 2.46C.*

2.2.2.4.2.4 Total Stepping

No significant effects were observed on total stepping. *See Fig 2.46D.*

2.2.2.4.2.5 Total movements

A significant effect of lesion was observed on total movements ($F_{1,54}$ = 4.022, p = 0.0499). Post hoc analysis showed that lesioned rats made significantly fewer total movements than non-lesioned rats. There were no significant individual group differences. *See Fig 2.46E.*

2.2.2.4.3 Comparison of P49 and P63

2.2.2.4.3.1 Percentage Left Limb Use

Repeated measures ANOVA revealed a significant interaction between time and exercise ($F_{1,51}$ = 4.150, p = 0.047). While post hoc analysis only showed a significant difference in % left limb use in runners between P49 and P63, the pattern observed was for % left limb use to decrease over time in non-runners and increase in runners. *See Fig 2.47A.*

2.2.2.4.3.2 Percentage Time Spent Grooming

A significant interaction between time, MS, and lesion was observed on % time spent grooming ($F_{1,51}$ = 4.155, p = 0.047). No significant individual group differences were observed, but the tendency was for grooming to decrease from P49 to P63 in non-separated

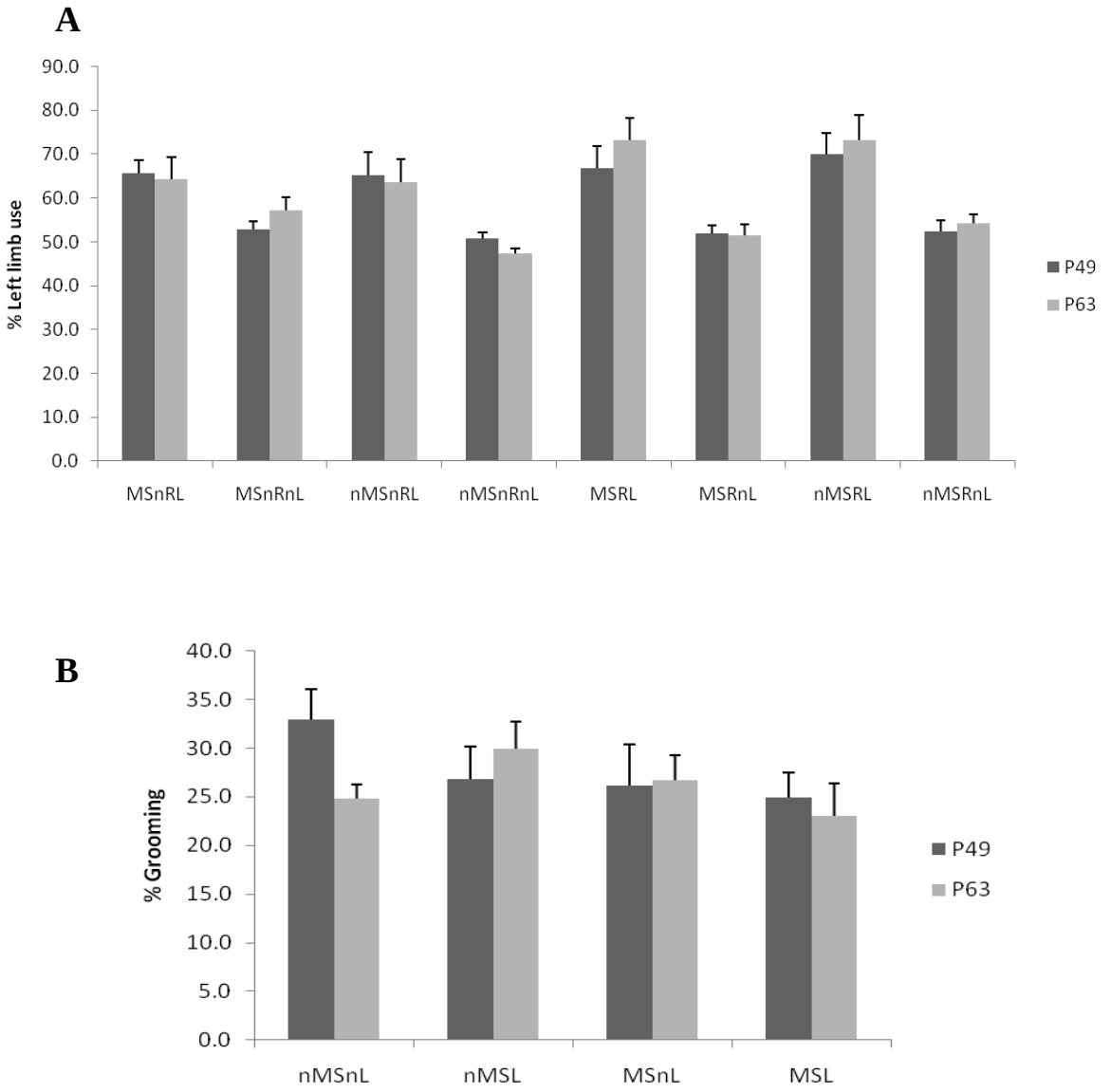

Figure 2.47*. Repeated measures comparison of P49 and P63: analysis of forelimb asymmetry by means of a ten-minute "cylinder test", by rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14, unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. A) Percentage use of the left limb: Interaction between testing day and R, $p<0.05$; interaction between testing day, MS, R and L, $p<0.05$. B) Percentage time spent grooming of total time: data collapsed across running status to show interaction of testing day, MS and L, $p<0.05$.*

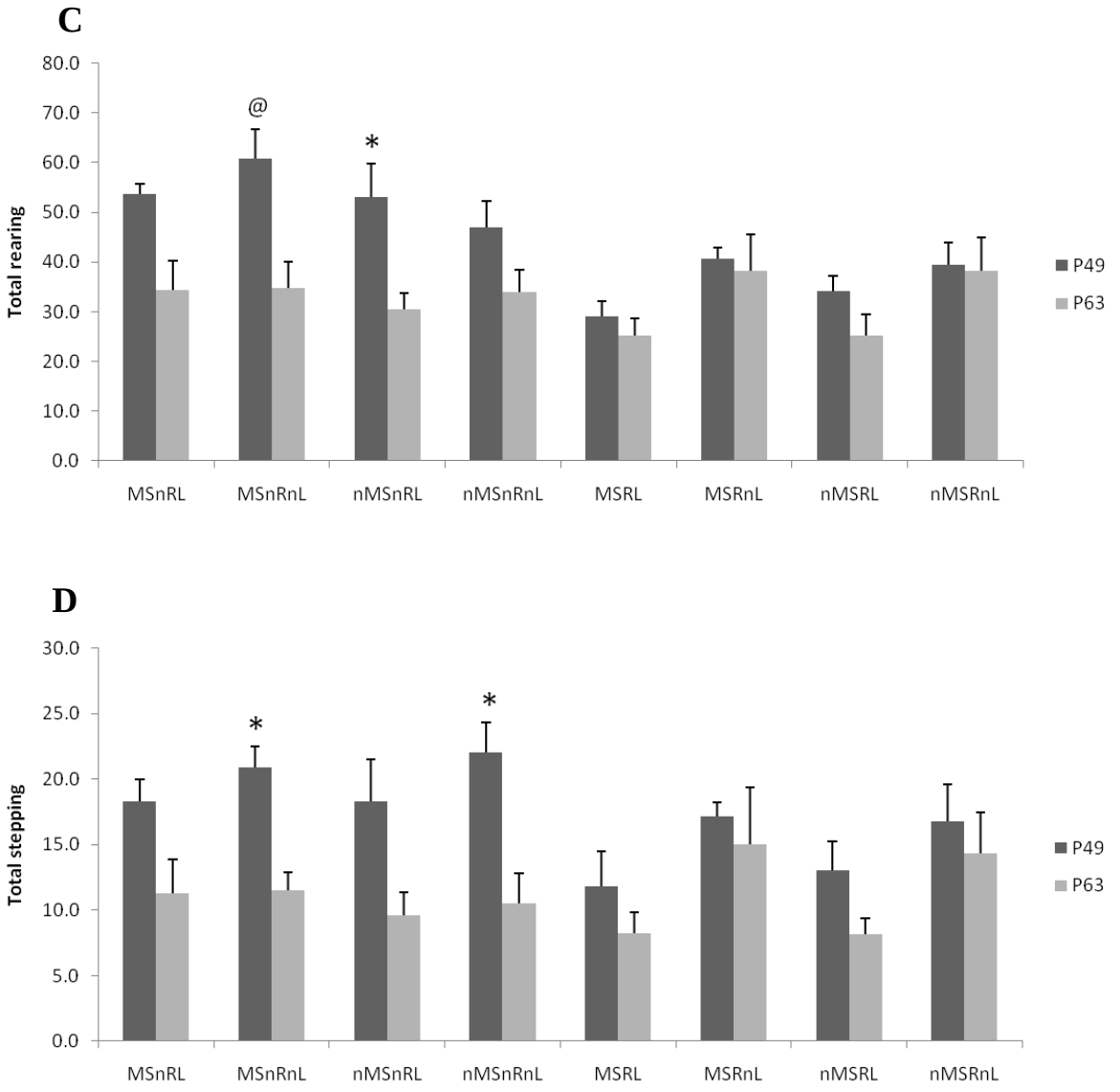

Figure 2.47 *cont. C) Total number of rearing movements: P49 > P63 ($p<0.001$): *$p<0.01$, $^{@}p<0.001$; interaction between testing day and R, $p<0.001$; interaction between testing day, MS and L, $p<0.05$. D) Total number of stepping movements: P49 > P63 ($p<0.001$): *$p<0.05$; interaction between testing day and R, $p<0.01$.*

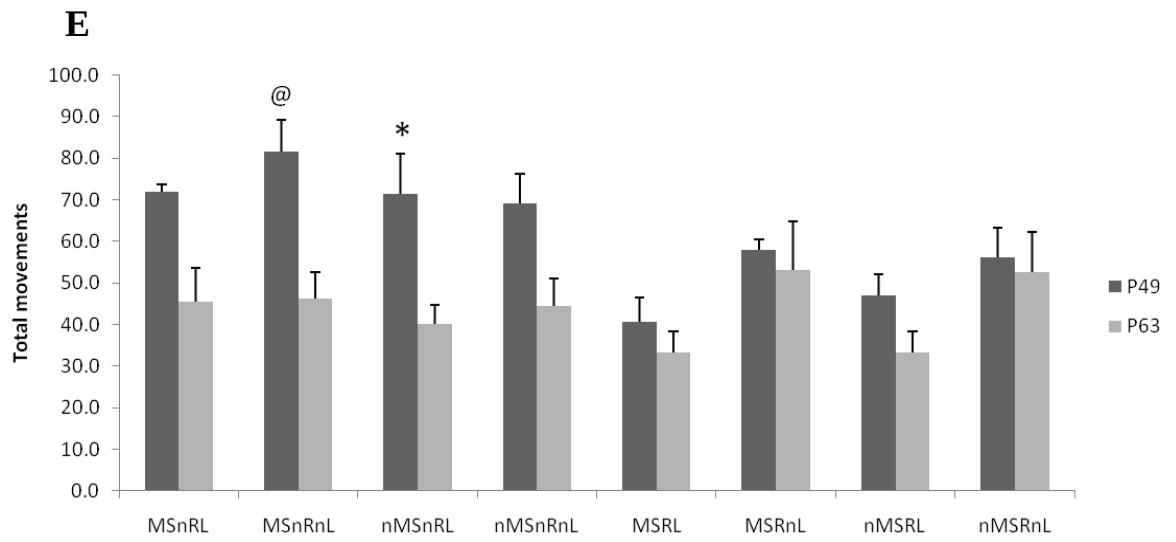

Figure 2.47 *cont. E) Total movements: P49 > P63 (p<0.001): *p<0.05; [@]p<0.001; interaction between testing day and R, p<0.001. Data shown as Mean + SEM. MSnRL: n=7; MSnRnL: n=7; nMSnRL: n=7; nMSnRnL: n=8; MSRL: n=9; MSRnL: n=8; nMSRL: n=8; nMSRnL: n=9.*

non-lesioned and separated lesioned rats, and to increase from P49 to P63 in non-separated lesioned and separated non-lesioned rats. *See Fig 2.47B.*

2.2.2.4.3.3 Total rearing

Total rearing reduced significantly over time ($F_{1,51}$ = 36.306, p = 0.000). There was also a significant interaction between exercise and time ($F_{1,51}$ = 15.213, p = 0.000); post hoc analysis showed that total rearing by non-runners on P49 was significantly greater than on P63 and than by runners on both testing days (p < 0.001 in all cases). A significant interaction was also observed between MS, lesion and time ($F_{1,51}$ = 4.040, p = 0.0497). *See Fig 2.47C.*

2.2.2.4.3.4 Total stepping

Total stepping reduced significantly over time ($F_{1,51}$ = 36.944, p = 0.000). A significant interaction was also observed between time and exercise ($F_{1,51}$ = 7.879, p = 0.007). Post hoc analysis showed that total stepping by non-runners on P49 was significantly greater than on

P63 and than by runners on both testing days ($p < 0.01$ in all cases). Total stepping in runners was significantly greater on P49 than on P63 ($p = 0.024$). *See Fig 2.47D.*

2.2.2.4.3.5 Total Movements

Total movements were significantly lower on P63 than on P49 ($F_{1,51} = 39.658$, $p = 0.000$). A significant interaction was also observed between time and exercise ($F_{1,51} = 13.519$, $p = 0.001$). Post hoc analysis showed that total movements by non-runners was significantly greater on P49 than on P63 ($p = 0.000$) and than by runners on both testing days ($p < 0.001$ in both cases). *See Fig 2.47E.*

2.2.2.4.4 Analysis of Non-separated Rats Only

Effects of exercise were further analysed by exclusion of maternally separated rats.

2.2.2.4.4.1 P49

Lesioned rats showed a significantly higher percentage left limb use than non-lesioned rats ($F_{1,27} = 17.732$, $p = 0.000$). Runners reared significantly less than non-runners ($F_{1,27} = 7.230$, $p = 0.012$). Total movements were significantly less in runners than non-runners ($F_{1,27} = 6.269$, $p = 0.019$). *See Fig 2.48.*

2.2.2.4.4.2 P63

Lesioned rats showed a significantly higher percentage left limb use than non-lesioned rats ($F_{1,28} = 19.859$, $p = 0.000$), as did runners than non-runners ($F_{1,28} = 4.343$, $p = 0.046$). *See Fig 2.49.*

2.2.2.4.4.3 Comparison of P49 and P63

Comparison of behaviour on P49 and P63 by means of repeated measures ANOVA showed a significant effect of time. A significant interaction between time and lesion was observed for

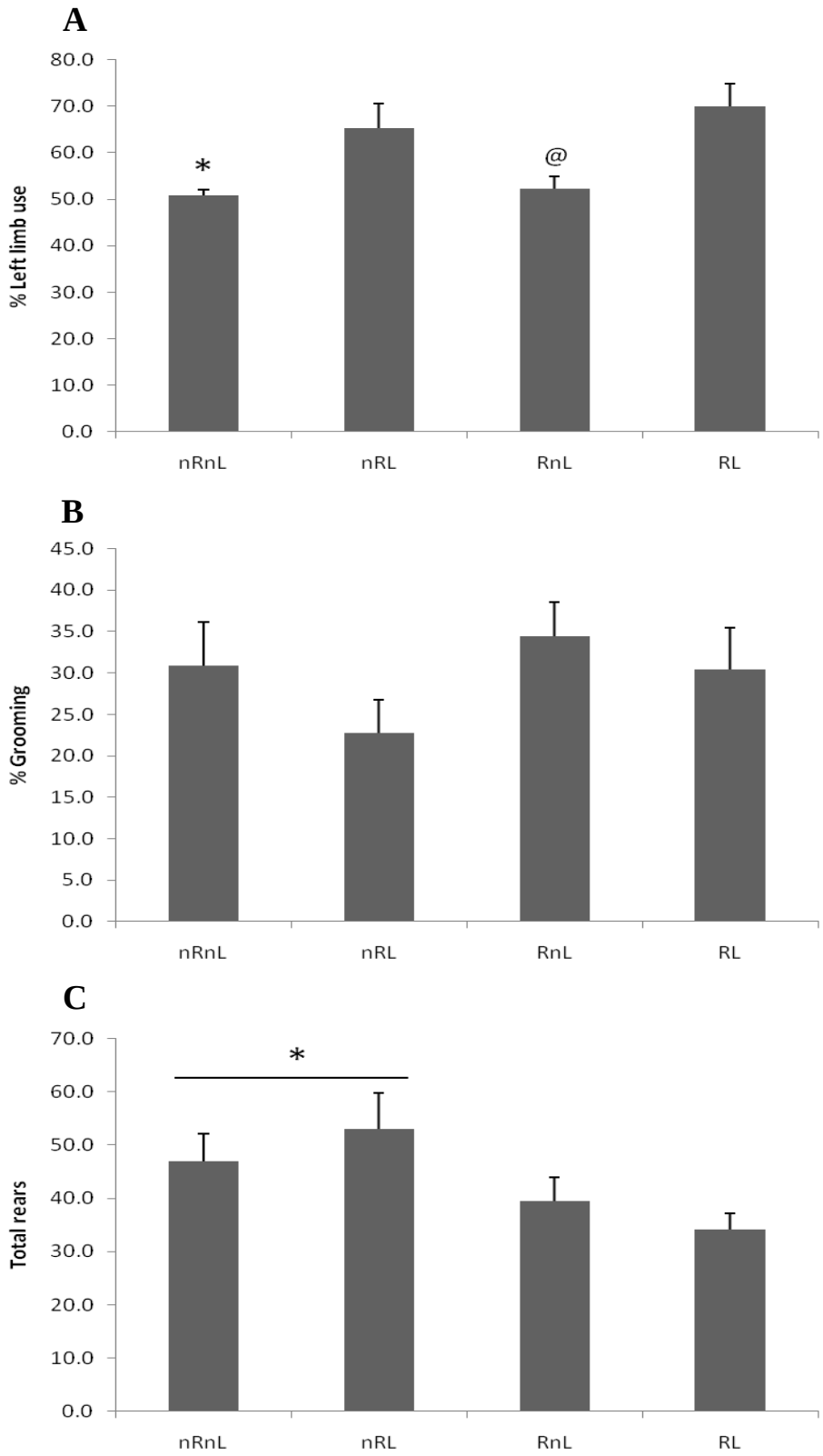

Figure 2.48 *Analysis of forelimb asymmetry by means of a ten-minute "cylinder test" on P49, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Percentage use of the left limb: nL < L *p<0.05; @p<0.01. B) Percentage time spent grooming of total time: no significant effects. C) Total number of rearing movements: nR > R *p<0.05.*

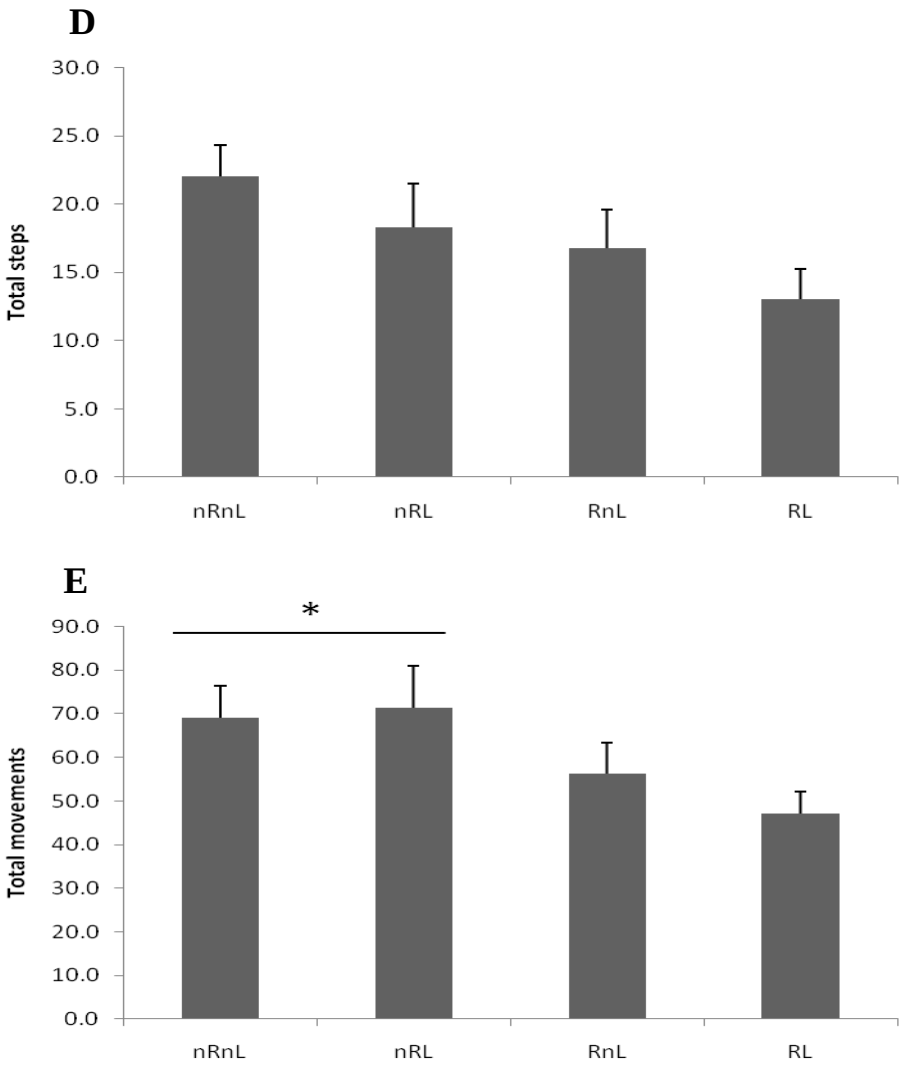

Figure 2.48 *cont. D) Total number of stepping movements: no significant effects. E) Total movements: nR > R *p<0.05. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

percentage time spent grooming ($F_{1,27}$ = 4.688, p = 0.039). Post hoc analysis showed no significant individual group differences, but the tendency was for grooming to reduce over time in non-lesioned rats and increase in lesioned rats. Total rearing was significantly less on P63 ($F_{1,27}$ = 19.432, p = 0.000), and an interaction was observed between time and running ($F_{1,27}$ = 5.709, p = 0.024), with total rearing by non-runners on P49 significantly greater than by runners on P49 and by both runners and non-runners on P63. Total stepping was significantly lower on P63 ($F_{1,27}$ = 32.347, p = 0.000), and an interaction was observed between time and running ($F_{1,27}$ = 6.885, p = 0.014), with stepping by non-runners greater on

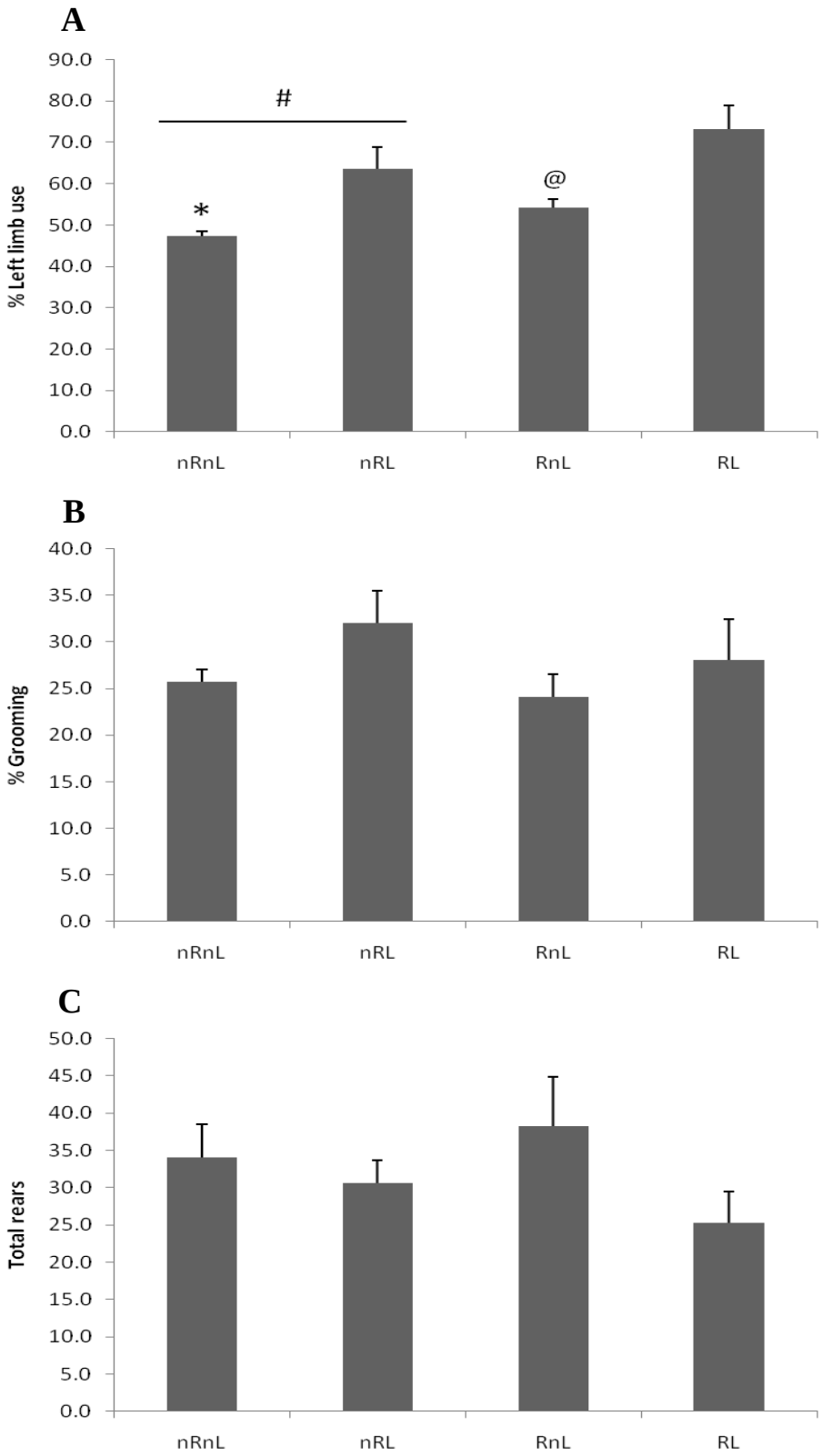

***Figure 2.49**. Analysis of forelimb asymmetry by means of a ten-minute "cylinder test" on P63, by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Percentage use of the left limb: nL < L *p<0.05, $^{@}$p<0.01; nR < R, $^{\#}$p<0.05. B) Percentage time spent grooming of total time: no significant effects. C) Total number of rearing movements: no significant effects.*

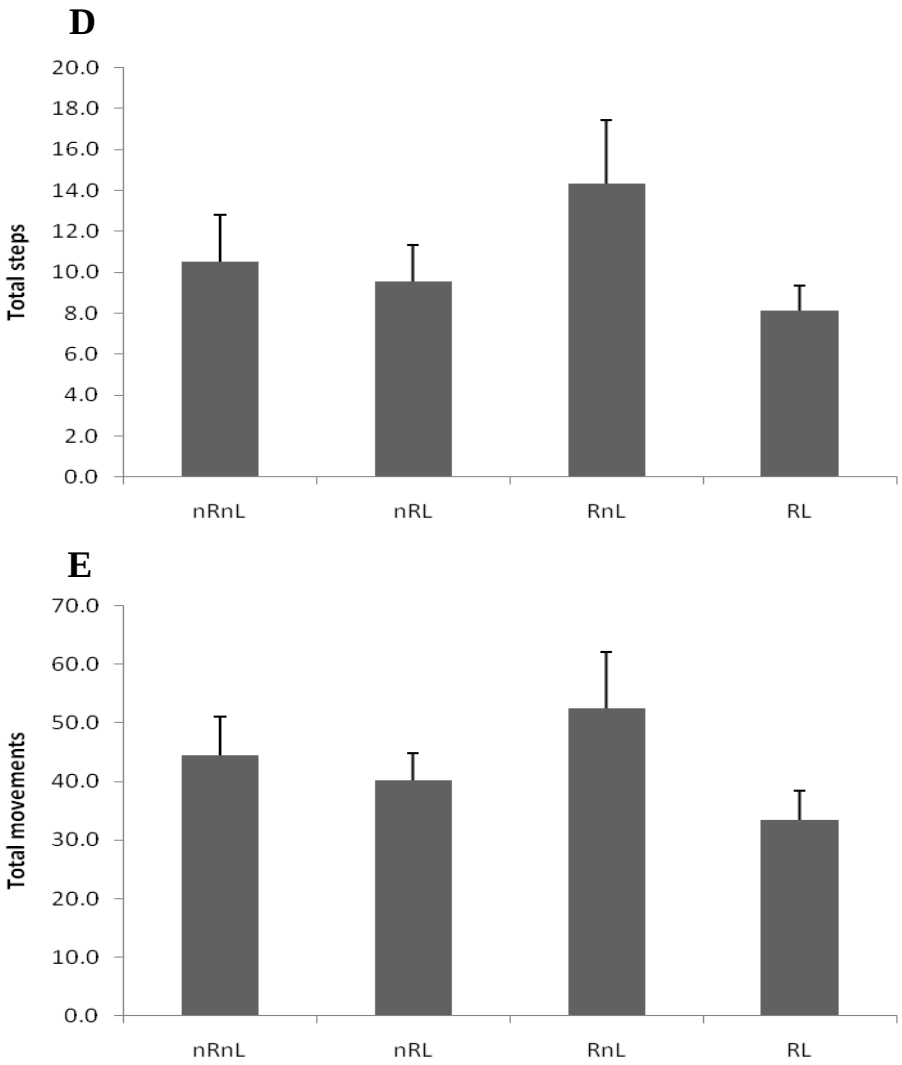

Figure 2.49 *cont. D) Total number of stepping movements: no significant effects. E) Total movements: no significant effects. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

P49 than on P63, and than runners on either testing day. Total movements were significantly less on P63 ($F_{1,27}$ = 25.144, p = 0.000) and an interaction between time and running was observed ($F_{1,27}$ = 6.573, p = 0.016), with movements by non- runners significantly greater on P49 than on P63, and than runners on either testing day. *See Fig 2.50.*

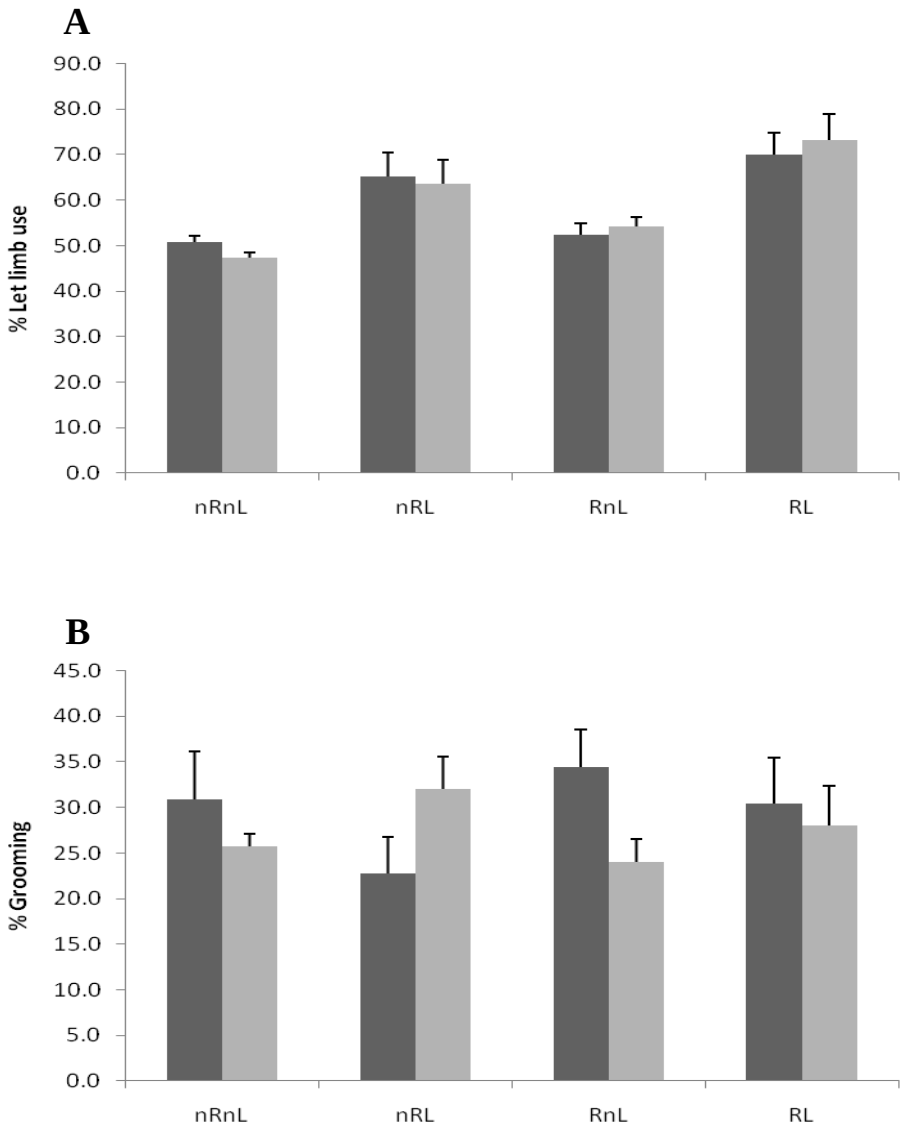

Figure 2.50 *Repeated measures comparison of P49 and P63: analysis of forelimb asymmetry by means of a ten-minute "cylinder test", by rats subjected to unilateral 6-OHDA (L) or saline (nL) injection into the left striatum on P35, and allowed to exercise freely in running wheels (R) or not (nR) from P28 to P49. Maternally separated rats were excluded from the analysis. A) Percentage use of the left limb: no significant effects. B) Percentage time spent grooming of total time: interaction between time and L, $p<0.05$.*

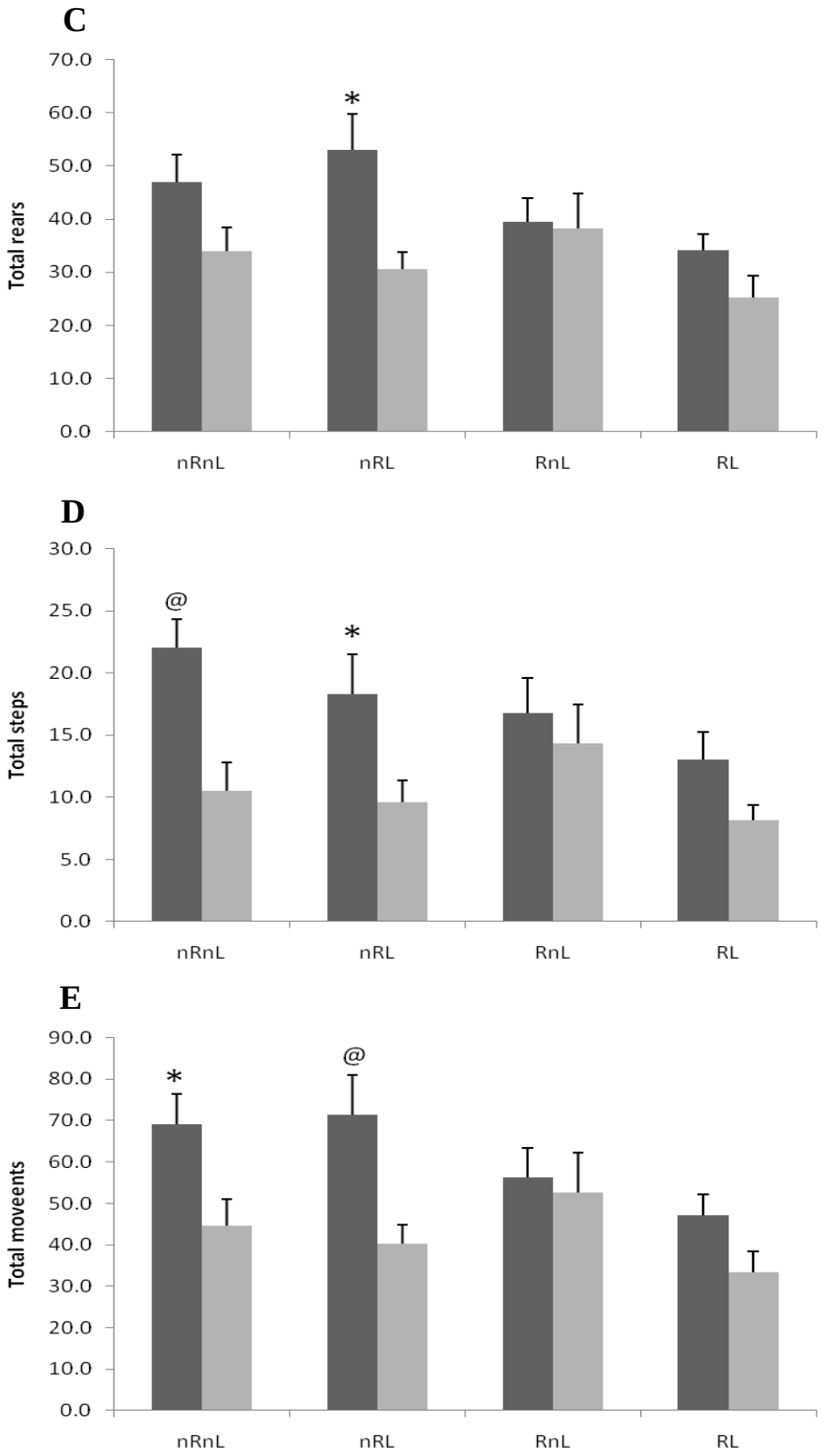

Figure 2.50 *cont. C) Total number of rearing movements: P49 > P63 (p<0.001): *p<0.01; interaction between time and R, p<0.05. D) Total number of stepping movements: P49 > P63 (0.001): *p<0.05, [@]p<0.01; interaction between time and R, p<0.05. E) Total movements: P49 > P63 (p<0.001): *p<0.05; [@]p<0.01; interaction between time and R, p<0.05. Data shown as Mean + SEM. nRL: n=7; nRnL: n=8; RL: n=8; RnL: n=9.*

2.3 DISCUSSION

Unilateral 6-OHDA infusion at P35 into the left striatum produced a significant lesion, which was observed in both tests of limb asymmetry performed. In the "step test", which allows direct comparison of right and left limb functionality, lesioned rats displayed significantly greater step length of the right front paw than the left, indicative of significant akinesia of the limb contralateral to the lesioned striatum. This result was seen on both testing days, indicating that there was no significant change in symptoms or alteration in the extent of the lesion over time. Such a result is in agreement with previous studies (Grealish *et al*, 2008; Mabandla & Russell, 2010; Pienaar *et al*, 2008; Woodlee *et al*, 2008) and is consistent with the destruction of dopaminergic neuron terminals in the striatum; this loss of DA modulation of the output nuclei results in increased inhibition of the thalamocortical neurons which control movement, and movement initiation of the limbs on the contralateral side is thus impaired. A degree of asymmetry was also observed in saline-injected rats in the step test, although to far less of an extent than in lesioned rats. This was probably due to mechanical damage caused by the infusion needle during surgery.

Examination of limb asymmetry by means of the "cylinder test" showed the same overall result. Lesioned rats exhibited significant limb use asymmetry, as shown by a greater percentage of left limb use only, both in paw placement (rearing) and stepping behaviour. Again, this was observed on both testing days, confirming the result of the step test that there was no significant improvement in the lesion over time.

No effect of MS was observed on forelimb akinesia in the step test, or on limb asymmetry in the cylinder test. This result is in contrast to that observed by Pienaar *et al* (2008), who noted enhanced limb akinesia in the step test in previously maternally separated female rats lesioned in adolescence as compared to those which had not been separated. Similarly,

Mabandla and Russell observed that previously maternally separated rats had a longer step length with the impaired forelimb than non-separated rats (2010). However, no effect of MS was observed in the asymmetry of paw use in the cylinder test by Mabandla and Russell (2010), which is in agreement with results obtained in this study.

It has been observed that following 6-OHDA lesion, step test deficits appear almost immediately (Kelsey *et al*, 2004); Grealish and colleagues noted that maximal deficit was observed within two days of surgery, while other tests of asymmetrical motor deficits, such as the vibrissae-elicited forelimb placing test and the corridor test, showed continued functional worsening of the lesion (2008). Although other studies (Mabandla & Russell, 2010; Pienaar *et al*, 2008) observed differences in step length, it is possible that a more subtle effect of MS was masked in the current study by the relative insensitivity of this test: if, for example, MS alters the rate at which neuron destruction occurs, this would not have been observed. Furthermore, it has been noted that normal rats exhibit "pawedness", or preferential use of one forelimb over the other (Barnéoud *et al*, 1995; Woodlee *et al*, 2008). In the cylinder test, particularly, this would introduce an inherent confounding factor into measurement of asymmetrical forelimb use. Woodlee *et al* performed the test prior to the lesion to obtain baseline "pawedness" measurements (2008). This was not done in the present study; possibly such a measure might have allowed reduced variation in the measures obtained in the cylinder test, and differences might have been observed.

It is possible that the dose of 6-OHDA used in this study (12µg) produced a maximal lesion, and no further effect of MS was possible. However, this was the same dose as that used by Pienaar *et al* (2008) who observed an effect of MS on rats lesioned in adolescence, suggesting that 12µg 6-OHDA is not sufficient to destroy the DA neurons completely.

No effect of exercise on the behavioural effects of the lesion was observed on either of the individual days tested. However, exercise appeared to increase limb asymmetry in the cylinder test over time. In previous studies investigating the effects of exercise on 6-OHDA lesion, behavioural extent of the lesion was reduced by exercise, both treadmill (Tillerson *et al*, 2003) and running wheel (Howells *et al*, 2005; Mabandla & Russell, 2010). These results were not observed in this study. It is possible that the daily distance run by the rats was not sufficient to provide neuroprotection, but this is unlikely given that Tillerson and colleagues observed neuroprotection following ten days of 450m per day of treadmill running (2003), which is considerably less than the distance travelled in running wheels by the rats in our study. Some research, however, has shown beneficial effects only after much longer periods of exercise; reduced amphetamine rotation after 6-OHDA lesion was observed after seven weeks of rotarod training in combination with enriched environment, while no effect was observed after only four weeks (Steiner *et al*, 2006). Poulton and Muir showed no effect of treadmill training on limb asymmetry as measured by the cylinder test, and indeed showed a somewhat negative effect on limb akinesia of three weeks of training, but after six weeks the treadmill-trained rats demonstrated significant improvements in limb akinesia (2005). It is thus possible that a beneficial effect of exercise might have been observed in this study had the rats been given access to the running wheels for a longer period, although reduced asymmetry in the cylinder test was not shown by Poulton & Muir even after six weeks (2005).

Numerous studies have suggested that physical exercise increases the antioxidant potential of the brain (Devi & Kiran, 2004; Liu *et al*, 200; Radak *et al*, 2006; Somani *et al*, 1996). Others, though, have shown no effect of exercise on oxidative profiles (Acikgoz *et al*, 2006; Selman *et al*, 2002). Some research, moreover, which showed antioxidant effects of exercise in various brain regions noted more limited positive effects in the striatum (Somani, Ravi &

Rybak, 1995), suggesting that this area may be less benefited by exercise than other brain regions. Somani *et al*, rather, saw increased levels of malondialdehyde, a marker of lipid peroxidation, in the striatum as a consequence of exercise (1996). Exercise was also shown to worsen the effects of reserpine, a depletor of vesicular monoamines and indirect inducer of oxidative stress, by significantly elevating lipid peroxidation levels in the striatum over those of non-exercised, reserpine-treated rats (Teixeira *et al*, 2009). In the present study, the antioxidant effects of exercise may have been limited, or even replaced by a pro-oxidant effect, which might have tended rather to worsen the extent of the lesion than reduce it.

In the light of a substantial body of evidence showing behavioural alterations associated with MS and with exercise, tests of anxiety-like behaviour were performed to determine whether these interventions had produced such alterations. The open field and EPM were used for this purpose, as well as certain behavioural measures in the cylinder test. The open field measures the behavioural results of the internal conflict in the animal between the desire to explore an environment and its fear of exposure to an open area (Toth *et al*, 2008). The inner zone presents a more aversive environment to the rat; in the outer zone, the animal may remain near the relative "safety" of the walls of the open field (thigmotaxis), and thus preference for the outer zone is generally thought to be a measure of anxiety (Fournier *et al*, 2009). The corresponding measures in the EPM, a widely used test of anxiety-like behaviour (Doremus, Varlinskaya & Spear, 2006), are entry into and duration in the open arms (Ramos *et al*, 1997); the open arms, as the inner zone, represent an area of greater exposure, and increased time spent in this more aversive environment is indicative of reduced anxiety.

The most-clearly observed effect of MS was increased activity. Maternally separated rats generally travelled a greater distance in the open field and with increased mean velocity. This was a more robust finding on P49, with separated rats showing almost no difference from non-separated rats on P63. In the EPM, by contrast, increased activity in separated rats was

observed on P63 rather than on P49, both in terms of distance travelled and mean velocity. No difference was observed between separated and non-separated rats in either the open field or the elevated plus maze on any of the measures of anxiety (frequency of entry and duration in the inner zone and open arms).

Numerous studies have documented the anxiogenic effects of MS as measured in the open field and/ or the elevated plus maze (Daniels *et al*, 2004; Kalinichev *et al*, 2002; Lippmann *et al*, 2007; Parfitt *et al*, 2007; Wigger & Neumann, 1999). Results, however, are equivocal. Many studies have shown that, rather than increasing anxiety-like behaviour, MS induces hyperactivity (Brake *et al*, 2004; Colorado *et al*, 2006; Eklund & Arborelius, 2006; Sanders & Anticevic, 2007; Slotten *et al*, 2006; Spivey *et al*, 2009).

Spivey *et al* (2009) suggest that MS may induce an attention deficit hyperactivity disorder (ADHD)-like symptomatology in adolescent rats, which would explain the increased locomotor activity. Research showing increased impulsivity (Colorado *et al*, 2006; Marco *et al*, 2007) supports this concept. According to this hypothesis, increased duration in aversive contexts, such as the open arms of the EPM and the central zone of the open field, could be interpreted as enhanced risk-taking behaviour. No effects of MS on these measures were observed in the present study, but increased velocity of movement has been posited as a measure of increased impulsivity, and this was a robust finding. ADHD has been observed in children as a consequence of early life trauma (Boer *et al*, 2009; Milberger *et al*, 1997; reviewed by Lupien *et al*, 2009), which suggests that there is validity in the above interpretation of increased activity following MS. Maternally separated rats exhibit increased reactivity to a novel environment (Marco *et al*, 2007); this may manifest as locomotor hyperactivity in some behavioural paradigms and anxiety-like behaviour in others. Of interest in this regard is research by Spivey *et al*, which showed hyperlocomotion by maternally

separated rats in the open field on the first day of testing, but no difference from controls in the same test on the following day (2009).

It is possible that the behavioural response consequent to MS is dependent on the age of testing; in the present study, changes in behaviour were observed from P49 to P63, with locomotor hyperactivity exhibiting in the open field on the earlier testing day, and in the EPM on the later. There is little evidence as to the progression of behavioural effects of MS over the lifespan; research suggests that the behavioural response to chronic stress in early life changes with age (McCormick, Smith & Matthews, 2008), but this study used a social stress paradigm in adolescence rather than MS, and tests were only performed on two days. Repeated behavioural testing of the effects of MS, beginning immediately post-weaning and continuing into late life, is warranted in this regard.

MS is widely used to model early developmental stress. A study of the literature, however, reveals that the term "maternal separation" is used to describe a variety of greatly-differing protocols which include the separation of the pups and the dam for some period prior to weaning. Separation may occur once (Avishai-Eliner *et al*, 1995; Ellenbroek, van den Kroonenberg & Cools, 1998; Gruss *et al*, 2007; Lehmann *et al*, 1999; Llorente *et al*, 2009; Marco *et al*, 2007; Roceri *et al*, 2002; Sutanto *et al*, 1996; Uysal *et al*, 2005; Van Oers, de Kloet & Levine, 1998) or repeatedly (Arborelius & Eklund, 2007; Colorado *et al*, 2006; Daniels *et al*, 2004; Desbonnet *et al*, 2008; Eklund & Arborelius, 2006; Farkas *et al*, 2009; Faure *et al*, 2007; Gardner *et al*, 2009; Giachino *et al*, 2007; Guijarro *et al*, 2007; Kalinichev *et al*, 2002; Lehmann *et al*, 1997; Lippmann *et al*, 2007; Marais *et al*, 2008; McCormick *et al*, 2002; Mourlon *et al*, 2010; Pienaar *et al*, 2008; Rivarola & Suárez, 2009;; Roceri *et al*, 2004; Rüedi-Bettschen *et al*, 2006; Sanders & Anticevic, 2007; Slotten *et al*, 2006; Spivey *et al*, 2009; Stevenson, Marsden & Mason, 2008; Toth *et al*, 2008; Wigger & Neumann, 1999). Separation time varies considerably, with studies using 1 hour (McCormick *et al*, 2002), 3

hours (Daniels *et al*, 2004; Desbonnet *et al*, 2008; Farkas *et al*, 2009; Faure *et al*, 2007; Gardner *et al*, 2009; Giachino *et al*, 2007; Guijarro *et al*, 2007; Kalinichev *et al*, 2002; Lippmann *et al*, 2007; Marais *et al*, 2008; Mourlon *et al*, 2010; Pienaar *et al*, 2008; Roceri *et al*, 2004; Sanders & Anticevic, 2007; Slotten *et al*, 2006; Wigger & Neumann, 1998), 4 hours (Rüedi-Bettschen *et al*, 2006), 4.5 hours (Rivarola & Suárez, 2009; Toth *et al*, 2008), 6 hours (Colorado *et al*, 2006; Lehmann *et al*, 1997; Spivey *et al*, 2009; Stevenson, Marsden & Mason, 2008) or 24 hours (Avishai-Eliner *et al*, 1995; Ellenbroek, van den Kroonenberg & Cools, 1998; Gruss *et al*, 2007; Lehmann *et al*, 1999; Llorente *et al*, 2009; Marco *et al*, 2007; Roceri *et al*, 2002; Sutanto *et al*, 1996; Uysal *et al*, 2005; van Oers, de Kloet & Levine, 1998; Zhang *et al*, 2002) and some involving twice daily separations (Arborelius & Eklund, 2007; Eklund & Arborelius, 2006). Moreover, while many studies perform the separation between P2 and P14 (Colorado *et al*, 2006; Daniels *et al*, 2004; Desbonnet *et al*, 2008; Faure *et al*, 2007; Gardner *et al*, 2009; Giachino *et al*, 2007; Guijarro *et al*, 2007; Kalinichev *et al*, 2002; Lippmann *et al*, 2007; Marais *et al*, 2008; Pienaar *et al*, 2008; Roceri *et al*, 2004; Stevenson, Marsden & Mason, 2008), this is by no means the standard (see, for example, Gruss *et al*, 2007; Lehmann *et al*, 1997; Lehmann *et al*, 1999; Rivarola & Suárez, 2009; Wigger & Neumann, 1998). With this degree of variation in the protocols used, comparisons between the results obtained by different studies are necessarily weakened. A large number of studies use a similar protocol to the one used in this study (separation for 3 hours per day, from P2 to P14), which lends validity to the results obtained here.

One issue of concern with regard to the variation in protocols of MS is that of the controls used. Two different groups are frequently used: non-handled, or animal facility reared controls, in which the litters and dams are left undisturbed, other than routine animal husbandry, during the period that the experimental rats are separated (Daniels *et al*, 2004; Desbonnet *et al*, 2004), and early handled, or brief separation controls, in which the litter and

dam are separated for a short period, usually 15 minutes, corresponding to the longer separation period of the experimental rats (Colorado *et al*, 2006). Some studies use both controls (see, for example, Arborelius & Eklund, 2007). It has been suggested that the early handled (EH) controls are a better control group for MS than non-handled (NH) litters, as the brief separation period controls for the handling experienced by the separated pups (Arborelius & Eklund, 2007). However, some studies have shown that EH rats exhibit reduced emotionality in the open field (Brake *et al*, 2004), and reduced HPA axis response to stress (Arborelius & Eklund, 2007) when compared to MS and NH rats, implying that the EH control may rather be an experimental group in its own right. Studies which compare the effects of MS with an EH control group may therefore obtain more robust effects than are strictly warranted. In the present study, standard animal facility reared litters were used as controls.

The effects of exercise on measures of anxiety and locomotor activity were robust. In the open field, runners travelled a shorter distance and exhibited a lower mean velocity than non-runners, and this effect was observed at both P49 and P63. Furthermore, runners spent less time in the inner zone of the open field and entered the inner zone less frequently, a result that was more clearly visible when separated rats were excluded from the analysis. In the EPM, exercised rats again travelled a shorter distance and had a lower mean velocity, an effect observed on both testing days, but there was no difference between exercised and non-exercised rats with regard to measures of anxiety-like behaviour. In the cylinder test, additional measures of locomotor activity – rearing against the walls of the cylinder and "stepping" with the forepaws along the walls – showed that there, too, runners were less active than non-runners, although this difference was only observed on P49.

Exercise has been suggested to have anxiolytic effects (Craft, 2005; de Moor *et al*, 2008). Following eight weeks of wheel running, Dishman *et al* observed increased locomotor

activity compared to sedentary controls, as well as increased approach into the inner zone of the open field (1996). Salam *et al* (2009) saw reduced anxiety-like behaviours across a number of tests as a consequence of running wheel exercise. This research contrasts with the results of the present study. It is highly unlikely that our results are a consequence of fatigue; similar effects were observed at P63, two weeks after rats had been removed from the running wheels. The reduced locomotor activity seen in the current study might, therefore, be interpreted as indicative of an anxiogenic effect of exercise. However, while reduced locomotor activity has been regarded by some as evidence of increased anxiety (Dishman *et al*, 1996), this interpretation is by no means universal, and is indeed contradicted by the results of several studies. For example, Salam *et al* noted that exercised mice exhibited reduced locomotor activity in the open field, while showing lower levels of anxiety-like behaviour in other tests (2009). Locomotor hypoactivity in the open field, but reduced time spent immobile in the forced swim test, a measure of depressive-like behaviour, was observed following voluntary wheel running (Duman *et al*, 2008). Similarly, reduced locomotor activity and time spent in the inner zone of the open field, but increased time on the open arms of the EPM, following wheel running exercise, was observed by Binder *et al* (2004), which provides further confirmation for the idea that open field locomotor activity may not simply be a measure of anxiety-like behaviour. Burghardt saw reduced open field activity and duration in the inner zone, and suggests that this may in fact be indicative of increased defensive behaviour and risk assessment as a consequence of exercise (2004). This interpretation is supported by Duman *et al* (2008). Binder *et al* have suggested that exercise may reduce stress responsiveness, which may be observed as lower levels of impulsivity and reactivity in a novel environment (2004). This interpretation compares well with the results obtained for maternally separated rats, where increased locomotor activity was observed and suggested to be ADHD-like; entry into the inner zone of the open field could thus be seen as

increased impulsivity and risk-taking behaviour. Interestingly, Binder and colleagues analysed open field behaviour over thirty minutes, and observed that, while exercised mice were hypoactive in the first ten minutes compared to sedentary controls, this was not the case in the remaining twenty minutes (2004).

As has been shown to be the case with MS, experimental exercise protocols are not all the same. Studies generally use either treadmill running or wheel running, but insufficient attention appears to have been paid to the fact that these are very different. Forced exercise, as exemplified by treadmill running, necessarily involves an element of stress; voluntary exercise, by contrast, allows the rats to select duration and intensity. It is not valid to regard the behavioural effects of these two forms of exercise as comparable: Burghardt and colleagues, for example, saw significantly different effects on open field and EPM behaviour as a consequence of the different protocols (2004). Leasure and Jones, who directly compared the effects of forced and voluntary running wheel exercise, observed that the forced runners showed significantly enhanced anxiety-like behaviour (2008); interestingly, voluntary runners were seen to travel at a greater velocity but for a shorter duration during periods of exercise, which further implies that the constant velocity and set duration of exercise imposed during forced exercise may well be a stressor.

One further aspect of the psychological effects of wheel running in laboratory animals must be mentioned. Standard animal facility housing tends to constrain activity, thus resulting in animals which are relatively more sedentary than their counterparts in the wild. Thus it is possible that the behavioural differences between exercised and sedentary rats are the result of deprivation and consequent abnormal activity on the part of the sedentary rats, rather than particular enrichment of the exercised rats (Pietropaolo *et al*, 2008).

Behavioural data was further analysed by subdivision into smaller time intervals. When open field activity was analysed over two successive intervals on P49, activity generally was observed to reduce over time. Both distance covered and mean velocity were lower in the second interval than in the first. Further breakdown of the time into one minute intervals showed that there was initially a slight increase in activity, followed by a steady reduction. Time spent in and frequency of entry into the inner zone, however, increased from the first to the second five minute interval. Analysis of one minute time-bins showed that these parameters tended to increase over time. There were no interactions between time and treatment group for most parameters measured. On P63, a slightly different profile was observed, with a reduction in all parameters over time.

In the EPM on P49, distance travelled, duration in the open arms, frequency of entry into the open arms, maximum velocity and mean velocity all decreased over time when successive one minute intervals were compared, with duration in the closed arms increasing over time. A similar pattern was observed on P63.

Decreased locomotor activity as seen in the reduction in distance travelled and velocity, is congruent with habituation of the rat to a novel environment. When placed in the open field the rat exhibited exploratory behaviour, possibly in an attempt to escape (Ramos & Mormède, 1998). However, as the rat habituated to the environment, overall activity reduced, but approach into the more aversive areas of the field increased (the inner zone), both in duration and in frequency. In the EPM, a similar reduction in locomotor activity was observed over time, but, unlike the open field, approach into the more aversive open arms also reduced over time. These two results appear to be somewhat contradictory. However, as Dawson and Tricklebank point out, decreased time spent in and frequency of entry into the open arms of the EPM may only be correlated with increased anxiety if locomotor activity is not simultaneously altered; given that the locomotor activity was concomitantly reduced, the

change in open arm duration and frequency may just be a mark of lower activity (1995), whereas the increase in open field inner zone duration and frequency, coming as it does with a simultaneous decrease in locomotor activity, more strongly suggests a decrease in anxiety. Carola *et al* have suggested that the EPM may be a more anxiogenic environment than the open field (2002). Thus the inner zone of the open field may be a less aversive area in which to remain immobile than the open arms of the EPM. Van Heerden *et al* suggest that increased avoidance of the open arms of the EPM may reflect spatial learning processes, wherein the rat learned to avoid the aversive regions of the maze (2009); this is not necessarily incompatible with the above explanation.

Comparison of open field activity on P49 and P63 showed an overall reduction in activity, with shorter distance travelled and lower mean and maximum velocities on P63, and reduced time spent and entry into the inner zone. Similarly, locomotor activity decreased in the EPM from P49 to P63, in terms of distance travelled and maximum and mean velocities. Frequency of entry into and duration in the open arms also decreased over time, while duration in the closed arms and central square was non-significantly increased. There are numerous possible explanations for the change in behaviour over time. Given the probable relationship between reduced locomotor activity and duration in the more aversive regions of the apparati (see above), it is more than likely that a decrease in duration in these regions was a correlate of the overall reduced locomotor activity rather than a marker of increased anxiety. Differences in behaviour might well be expected, given that the first test was performed during adolescence and the second in early adulthood; behavioural differences in the open field and elevated plus as a consequence of age has been observed before (McCormick, Smith & Matthews, 2008). Age-dependent differential effects of developmental stress have been observed in human studies, with the suggestion that hyperactivity and impulsiveness may be a consequence exhibited in juveniles, while in adulthood the effects tend to manifest as anxiety and

depression (Boer *et al*, 2009). There was no interaction between MS and time, which makes this explanation unlikely for the current study. Doremus and colleagues, however, point out that increases in risk-taking, sensation-seeking and novelty-seeking are characteristic behaviours for adolescents in general (2006), and this would correspond well with the reduction in activity.

A methodological factor which might very well have influenced activity is the change in phase of light/dark cycle, which was done for logistical purposes relating to rat housing. On P49 rats were tested during the first part of the dark phase of the cycle, while on P63 testing occurred during the later part of the light cycle, although all tests were performed in the light. Since the light phase corresponds to lower activity (Binder *et al*, 2004), rats may have moved less on P63 merely as a consequence of diurnal phase, and thus any discussion of the change in behaviour from P49 to P63 must take this aspect into account.

One further general aspect of this study needs to be addressed here, and that is the issue of the physical isolation experienced by the rats during the exercise protocol. From P28 to P49, rats were housed individually to allow direct monitoring of running wheel usage. However, isolation of animals post-weaning is considered a model of social stress (Doremus-Fitzwater, Varlinskaya & Spear, 2009), and animals thus treated display altered behaviour in novel environments such as the open field when compared to group-reared controls (Arakawa, 2005; Lukkes *et al*, 2009a) and changes in stress-hormone responses to stress even in adulthood (Lukkes *et al*, 2009b, Mathews *et al*, 2008). Arakawa further observed that these alterations in behaviour were not reversed by pair-housing the isolated rats during adulthood (2005). Adolescence is a critical period of development and of vulnerability to a variety of stressors (McCormick & Mathews, 2007), and it is likely that social interaction at this age is an essential modulatory factor in the maturation of neural substrates underlying responses to novelty and exploratory behaviour (Arakawa, 2005). Of particular relevance is research

which suggests that individually housed mice displayed significant locomotor hyperactivity compared to individually housed mice supplied with running wheels (Zhu *et al*, 2006). Individual housing was an unavoidable aspect of this protocol, and its effects were controlled to a certain extent by the fact that all rats were housed in similar cages, with non-exercised rats in cages with locked wheels. However, it cannot be denied that this was a real stressor, and occurring as it did around the time when the 6-OHDA infusion was performed, it is possible that its effects overwhelmed any relatively more subtle effects of MS on the lesion. This possibility is supported by evidence showing that social isolation post-weaning reduces DA metabolite levels in the left striatum (Heidbreder *et al*, 2000), and that individual housing significantly reduced BDNF levels, an effect which was not ameliorated by provision of running wheels (Zhu *et al*, 2006). Pietropaolo and colleagues comment that the use of adult animals in studies of voluntary wheel running exercise is preferential because it avoids the effects of social isolation which have the highest effects when occurring in the juvenile phase (Pietropaolo *et al*, 2008); it is quite possible that this is one of the chief reasons a beneficial effect of exercise on the extent of the striatal 6-OHDA lesion was not observed in this study, while in studies of adult rats exercise was neuroprotective.

Taken together, therefore, the results of the present study suggest that both MS and exercise induce long-term behavioural effects. MS caused rats to become hyperactive in both the open field and EPM, which suggest that early developmental stress may be a factor involved in the development of such disorders as ADHD. Voluntary running wheel exercise, by contrast, induced a significantly lower level of activity, and behaviour which can be interpreted as more cautious and less impulsive. Neither MS nor exercise significantly affected the extent of 6-OHDA lesion as measured by behavioural tests of forelimb asymmetry and akinesia, but it is possible that the isolation stress involved in the running protocol prevented the effects of these more subtle influences.

CHAPTER 3

There is strong evidence for the fact that stress during early development endows the brain with a vulnerability to the development of later disorders, and a number of studies have shown that exposure to maternal separation in the early post-natal period worsens the effect of later unrelated neural insults. Furthermore, much research supports the concept that sex plays a role in the response to stress: differences have been observed between males and females in the effects of chronic stress on both the behavioural and neurochemical levels. This study, therefore, investigated whether early developmental stress in the form of maternal separation would affect the extent of damage induced by an intrastriatal 6-OHDA lesion, and whether the extent of lesion would be different in male and female rats.

3.1 METHODS

3.1.1 6-HYDROXYDOPAMINE DOSE RESPONSE

3.1.1.1 ANIMALS

A total of 17 male Sprague Dawley rats was used in this study. Animals were housed under a light/dark cycle of 12h/12h (lights on 06:00 – 18:00), and in a controlled temperature (22 ± 1°C), with *ad libitum* access to food pellets and water. Ethical permission for the project was obtained from the Faculty of Health Sciences Animal Ethics Committee of the University of Cape Town.

3.1.1.2 SURGERY

Animals underwent surgery on approximately P82 (range P74 – P88). Stereotaxic surgery was performed as described above (section 2.1.4). One of three possible doses of 6-OHDA was administered: 12µg (n = 6), 20µg (n = 7) or 30µg (n = 4), at the following coordinates: AP: 8.0mm (from interaural line); ML: 3.0mm (left side); DV: 5.0mm (below dura). All doses were administered in a total volume of 4µL vehicle (0.2% ascorbate dissolved in 0.9% saline), at a rate of 0.5µL/ min.

3.1.1.3 TRANSCARDIAL PERFUSION

Transcardial perfusion was performed six days following surgery. Rats were removed from the animal room and taken in their home cages to the laboratory.

Rats were deeply anaesthetised in a saturated halothane atmosphere. The heart was exposed and a needle inserted into the left ventricle, whereupon chilled 0.1M phosphate-buffered saline (PBS) was pumped into the cardiovascular system by means of an automated pump (Gilson Minipuls 2). A small incision was made in the right atrium to allow the release of blood.

PBS was pumped through the cardiovascular system for 3 minutes, until the blood had been completely flushed away. This was considered to have taken place when the saline that emerged from the right atrium was straw-coloured. The rat was then perfused for 20mins with a chilled solution of 4% paraformaldehyde in 0.1M PBS. Paraformaldehyde was prepared no more than a day prior to perfusion (see appendix A3.3).

Following completion of perfusion, the rat was decapitated and the scalp and soft tissue removed from the skull. Rongeres were used to remove the skull and expose the brain. The brain was then removed and placed in 30% sucrose in 0.1M PBS (see appendix A3.4) for cryoprotection.

3.1.1.4 CRYOSECTIONING

Brains were considered sufficiently cryoprotected when they no longer floated in the cryoprotection medium. At this point, cryosectioning took place.

Immediately prior to sectioning the brain was snap frozen by immersion in powdered dry ice (frozen CO_2). The brain was well-coated in Jung tissue freezing medium and placed in the cryostat (Leica CM 1850) to allow full solidification of the medium. All sectioning took place at -20°C.

The brain was sliced coronally in an anterior to posterior direction. 40µm sections were taken from the striatum and from the region of the midbrain encompassing the substantia nigra, with landmarks defined according to the rat brain atlas of Paxinos and Watson (1986). Sectioning of the striatum began at the most anterior appearance of the corpus callosum and continued up to and including the final disappearance of the anterior commissure.

In its most anterior aspect, the hippocampus is located dorsally in a coronal section. With progression in a caudal direction, a ventro-lateral portion of the hippocampus becomes visible which projects into the lateral ventricle. Sectioning of the substantia nigra began where the dorsal and ventral portions of the CA3 region of the hippocampus joined, and continued until only the lateral hilus of the dentate gyrus could be observed and the transverse fibres of the pons were visible.

All sections were transferred immediately to ice-cold 0.1M PBS; sections were serially placed into ten groups (five per brain region). Immediately upon conclusion of sectioning, sections were transferred to antifreeze medium (see appendix A3.1) and stored at -20°C until the commencement of the immunohistochemical staining procedure took place.

3.1.1.5 IMMUNOHISTOCHEMISTRY

Immunohistochemical staining involves the sequential application to sectioned tissue of 1) a primary antibody to the protein of interest, 2) a biotinylated secondary antibody which recognises the primary, 3) a complex of avidin and peroxidase-linked biotin, 4) diaminobenzidine (DAB) and H_2O_2 (Hsu, Raine & Fanger, 1981; Sternberger *et al*, 1970). Avidin has an extremely high affinity for biotin: this property enables the construction of a link between the secondary antibody and the peroxidase which allows for amplification of

staining (Hsu, Raine & Fanger, 1981). Application of peroxidase to a solution of DAB and H_2O_2 results in a brown precipitate which can then be used to visualise the expression and distribution of the protein of interest; addition of a nickel solution to the DAB/ H_2O_2 solution produces a bluish-black precipitate which is somewhat easier to visualise and may further amplify the staining (Hsu & Soban, 1982).

3.1.1.5.1 Tyrosine Hydroxylase

Sections including the SN were stained for TH immunoreactivity. Five representative sections were selected from one of the stored series per brain. Remaining series were kept in antifreeze medium for possible analysis of other proteins. All staining took place in 24 well plates, with one section per well: 400µL of the relevant solution was used for incubations, and an excess (approximately 1mL) of 0.1M PBS (with or without Triton® X-100, as stated) for each wash. Unless otherwise specified, sections were agitated on the Bellydancer® at room temperature for all incubations and washes.

Sections were transferred from the antifreeze medium and washed in 0.1M PBS 3 times for 10 minutes each. Fresh PBS was used for each wash.

Sections were then incubated in 3% H_2O_2 (1:10 dilution in 0.1M PBS of a 30% stock H_2O_2 solution) for 30 minutes.

Sections were washed in 0.1M PBS, 3 x 10 minutes.

Sections were incubated in blocking solution (0.5% bovine serum albumin (BSA), 2% normal horse serum (NHS) and 0.3% Triton® X-100 in 0.1M PBS) for 1 hour.

Prior to use, antibodies were aliquoted, diluted 1:1 in glycerol and stored at -80°C. When needed, aliquots were thawed on ice. A monoclonal antibody to TH, raised in mouse, was used in these experiments. The antibody: glycerol mixture was diluted 1:8000 in blocking solution (detailed above), to a final dilution of 1:16 000.

Sections were incubated in primary antibody solution, and gently agitated overnight at room temperature. They were then transferred to 4°C where they were incubated for a further 48 hours.

Sections were washed in 0.1M PBS with 0.3% Triton® X-100, 3 x 10 minutes.

Biotinylated polyclonal antibody to mouse, raised in horse, was diluted 1:1000 in blocking solution as above. Sections were incubated for 2 hours in the secondary antibody solution.

Sections were washed in 0.1M PBS with 0.3% Triton® X-100, 3 x 10 minutes.

30 minutes before incubation, the Vectastain® ABC reagent (henceforth referred to as ABC) was prepared. A Vectastain® Elite® ABC Kit was used for this. ABC – **A**vidin and **B**iotinylated horseradish peroxidase **C**omplex – was prepared by mixing 1% reagent A (Avidin DH) and 1% reagent B (biotinylated horseradish peroxidase) in 0.1M PBS with 0.3% Triton® X-100. The mixture was allowed to stand at 4°C for 30 minutes. Sections were then incubated in ABC for 90 minutes.

Sections were washed in 0.1M PBS, 3 x 10 minutes.

10 minutes before the detection step took place, the diaminobenzidine (DAB) solution was prepared. A Vector® peroxidase substrate kit was used for this. To 5mL of dH_20, 2 drops of buffer stock solution, 4 drops of DAB stock solution and 2 drops of nickel stock solution were successively added and well-mixed by shaking. A separate solution of 2 drops H_2O_2 stock solution in dH_2O was prepared. These solutions were allowed to stand for 10 minutes.

Sections were added to the DAB solution, and 30µL H_2O_2 solution was added. Sections were incubated for approximately two minutes, or for a shorter period if stain developed more quickly, and were then immediately transferred to 0.1M PBS to halt the reaction.

Sections were washed in 0.1M PBS, 3 x 10 minutes.

Sections were mounted on gelatinised slides (see appendix A3.2), 3 per slide, from 0.1M NaCl-free phosphate buffer (see appendix A3.5). This buffer leaves little residue when it dries, in contrast to PBS. Sections were allowed to dry overnight before being dehydrated and coverslipped.

Dehydration took place by means of immersion of slides in an ascending series of alcohols: 70% alcohol (4 minutes); 95% alcohol (2 x 4 minutes); absolute alcohol (2 x 5 minutes). Sections were then cleared in xylol (2 x 5 minutes) and coverslipped with Entellan®.

3.1.1.5.2 Phospho-c-jun

3.1.1.5.2.1 Phospho-c-jun Antibody Dilution Series

Prior to immunohistochemical investigation of phospho-c-jun expression, a pilot study was performed to investigate the optimal phospho-c-jun antibody dilution. Sections of the midbrain containing SN, from rats infused with a 20µg dose of 6-OHDA, were each stained using one of three possible antibody dilutions: 1:250, 1:500 or 1:1000 (see details of phospho-c-jun immunohistochemistry below). Staining was observed at each of the three dilutions. It was decided to use a dilution of 1:500 for the main study, as this was thought to provide a greater certainty of adequate staining, particularly in sections from brains treated with a lower dose of 6-OHDA.

3.1.1.5.2.2 6-OHDA Dose Response: Expression of Phospho-c-Jun

Sections from the SN were stained for phospho-c-jun immunoreactivity. Four representative sections were selected from one of the stored series, per brain. The staining procedure was almost identical to that used for TH staining, with the following exceptions.

The blocking solution was made up with 2% normal goat serum in place of the normal horse serum used above. Goat serum was used because the secondary antibody used in this procedure was raised in goat.

A polyclonal antibody to phospho-c-jun, raised in rabbit, was used as the primary antibody. It was diluted 1:500, as described above.

The secondary was a biotinylated polyclonal antibody to rabbit, raised in goat. A dilution of 1:1000, in blocking serum as for the primary, was used.

3.1.1.6 QUANTIFICATION OF IMMUNOREACTIVITY

Immunoreactivity was analysed using a Zeiss Axiovert 200M microscope. All slides were coded so that analysis was performed blind to 6-OHDA dosage.

3.1.1.6.1 Tyrosine Hydroxylase

All cell bodies staining positive for TH were counted under 100x magnification. Cells from both the compacta and reticulata of the SN were counted. One series of sections (one brain, dose 20µg 6-OHDA) was discarded upon analysis because the sections were too badly damaged to analyse. Right and left hemispheres were counted separately, so that each section had two cell counts. Each brain thus had ten counts – five per hemisphere – and these were

added to give two total representative cell counts for the SN of that rat, a left count and a right count. These were statistically analysed in two different ways: a) right and left counts were compared, and b) a percentage ratio of left count to right count was calculated. This latter was included to compensate for possible individual variation in sections, in terms of preservation, staining quality and position of the section in the SN.

3.1.1.6.2 Phospho-c-Jun

Cell bodies staining positive for phospho-c-jun were counted under 200x magnification. Both compacta and reticulata were included, as for the TH cells. No staining was observed in the right hemisphere, as was expected, so only the left side was counted for each section. Each rat thus had four final counts, which were summed to give a single final representative count per rat.

3.1.1.7 STATISTICAL ANALYSIS

Data were analysed by means of factorial ANOVA. Repeated measures ANOVA was used to compare TH-immunoreactivity on the left and right sides. Where a significant effect was observed ($p < 0.05$), post hoc analysis was performed using Newman Keuls test.

3.1.2 MATERNAL SEPARATION 6-OHDA TYROSINE HYDROXYLASE IMMUNOHISTOCHEMISTRY

3.1.2.1 ANIMALS

A total of 27 Sprague Dawley rats, both male (n = 14) and female (n = 13) was used in this study. Rats were housed under a 12h/12h light/dark cycle (lights on 06h00 – 18h00), in a controlled temperature (22 ± 1°C), with *ad libitum* access to food pellets and water. Ethical permission for the project was obtained from the Faculty of Health Sciences Animal Ethics Committee of the University of Cape Town.

3.1.2.2 MATERNAL SEPARATION

MS (n = 15) was performed as described above (section 2.1.2). Litters were culled to 8 pups on P2, with a male to female ratio as close to 1:1 as was possible. All other manipulations were as described in section 2.1.2. Controls (n = 12) were undisturbed apart from standard animal facility handling.

Litters were weaned on P21. Animals were separated on the basis of sex, but otherwise communally housed until surgery was performed.

3.1.2.3 SURGERY

Stereotaxic surgery was performed by Ms. Jacqueline Womersley.

When animals were between 10 and 12 weeks of age (mean P82; range P74 – P88), 6-OHDA was administered by means of stereotaxic infusion into the left striatum. Surgery was

performed as described above (section 2.1.4): stereotaxic coordinates used were 8.0mm AP (from interaural line), 3.0mm ML (left side), and 5.0mm DV (from dura). 6-OHDA was infused at a rate of 1µL per minute. Following recovery from anaesthetic, rats were returned to the Animal Room and individually housed.

3.1.2.4 PERFUSION AND FIXATION

Seven days after surgery rats were killed by transcardial perfusion and brains were harvested. Perfusion was performed as described above (Section 3.1.1.3); rats were, however, exsanguinated with ice-cold 0.1M PBS for 5mins instead of 3mins, to compensate for their increased size. Brains were removed and cryoprotected in 30% sucrose in 0.1M PBS; when cryoprotection was complete (i.e. when the brains had sunk to the bottom of the sucrose solution), brains were embedded in Jung Tissue Freezing Medium and frozen at -80°C until sectioning.

3.1.2.5 SECTIONING

Prior to sectioning, brains were transferred from -80°C to the cryostat (-20°C). Brains were sectioned as described above (section 3.1.1.4); sections were transferred to antifreeze medium and stored at -20°C until immunohistochemical staining was performed.

3.1.2.6 IMMUNOHISTOCHEMISTRY

Sections from both the striatum and the midbrain including the SN were stained for TH immunoreactivity. Five representative sections were selected from two of the stored series – one series per brain region – per brain (10 sections in total per brain).

Immunohistochemistry was performed as described above (section 3.5.1.1.5).

3.1.2.7 QUANTIFICATION OF TYROSINE HYDROXYLASE IMMUNOREACTIVITY

Asymmetry of TH expression was measured in both the striatum and the SN. All sections were coded so that analysis was performed blind to treatment conditions. As above, a Zeiss Axiovert 200M microscope was used for magnification.

3.1.2.7.1 Quantification of Tyrosine Hydroxylase Staining in the SN

Cell bodies staining positive for TH expression were counted in the SN exactly as described in section 3.1.1.6.1.

3.1.2.7.2 Quantification of Tyrosine Hydroxylase Staining in the Striatum

Density of TH staining in the striatum was quantified by means of densitometry. One of the brains (12: non-separated, female) was discarded because a severe asymmetry was observed between the background staining of the left and right sides.

An Axiocam HRm camera attached to the microscope was used to capture digital photographic images of the striatum under 100x magnification. The entire striatum was captured for each section, bordered by the corpus callosum dorsally and laterally, the anterior commissure ventrally and the lateral ventricles medially. Exposure was kept standard within sections. Between eight and ten images were captured per hemisphere, per section.

Densitometry was performed on each image using Carl Zeiss Axiovision Vs. 4.8 software (see appendix A2.2 for a step-by-step description). Representative stained regions were

outlined, avoiding areas of low staining such as fibre bundles, and an average densitometrical value determined for each region. A mean densitometrical value for the entire hemisphere within each section was calculated from all values for that section, with a final right and final left value being obtained for each section; the mean values for the five sections were then averaged, so that one final value per hemisphere was obtained for that brain.

Background reading for both hemispheres was also determined. Measurements were taken from cortical regions which appeared in the sections, and these were averaged to obtain a mean background density reading for each hemisphere. This was necessary to account for factors such as non-specific staining, and also to reduce the level of experimental variability between brains. Four values in total were thus obtained per brain.

Left and right background readings were subtracted from the respective striatal readings. The corrected left hemisphere was then divided by the corrected right, and the result multiplied by 100 to obtain a percentage value. This value represents the degree of dopamine neuron terminal loss in the left striatum as a result of 6-OHDA infusion.

3.1.2.8 STATISTICAL ANALYSIS

The number of TH+ cells in the left SN was expressed as a percentage of the number of TH+ cells in the right SN, and the treatment effects analysed by means of factorial ANOVA. Comparison of TH-immunoreactivity on the left and right sides of both striatum and SN was analysed by means of repeated measures ANOVA. Where a significant effect was observed ($p < 0.05$), post hoc analysis was performed using Newman Keuls test.

Density of staining in the left striatum was expressed as a percentage of staining density in the right striatum. This data was tested for normality by means of the Shapiro-Wilk test for

normality and found to be non-normally distributed. Kruskal-Wallis ANOVA by ranks test was consequently used to determine significant effects.

Details of analysis of individual studies are described in the results sections of those studies.

Data are presented as mean ± SEM unless otherwise specified.

3.1.2.9 MATERIALS

A list of materials and suppliers is provided in appendix A1.

3.2 RESULTS

3.2.1 6-HYDROXYDOPAMINE DOSE RESPONSE

A total of 17 male Sprague-Dawley rats was used for this study. Rats underwent an intrastriatal infusion with 6-hydroxydopamine (6-OHDA) at one of three doses (12µg [n = 6], 20µg [n = 7] or 30µg [n = 4]). 40µm serial sections through the substantia nigra were immunohistochemically stained for phospho-c-jun (4 sections) and tyrosine hydroxylase (5 sections).

3.2.1.1 PHOSPHO-C-JUN IMMUNOHISTOCHEMISTRY

Phospho-c-jun immunoreactivity was only observed in the left SN (See Fig 3.1). Data were analysed by means of one-way ANOVA. *See appendix A5.2.1.1.*

No significant difference in total cell counts was observed between any of the doses ($F_{1,14}$ = 0.0566, p = 0.579), although mean cell count tended to increase with increasing 6-OHDA dose. *See Fig 3.2.*

3.2.1.2 TYROSINE HYDROXYLASE IMMUNOHISTOCHEMISTRY

Right and left sides were compared by means of repeated measures ANOVA. Significant differences ($p < 0.05$) were further investigated by means of post hoc Newman Keuls tests. *See appendix A5.2.1.2.*

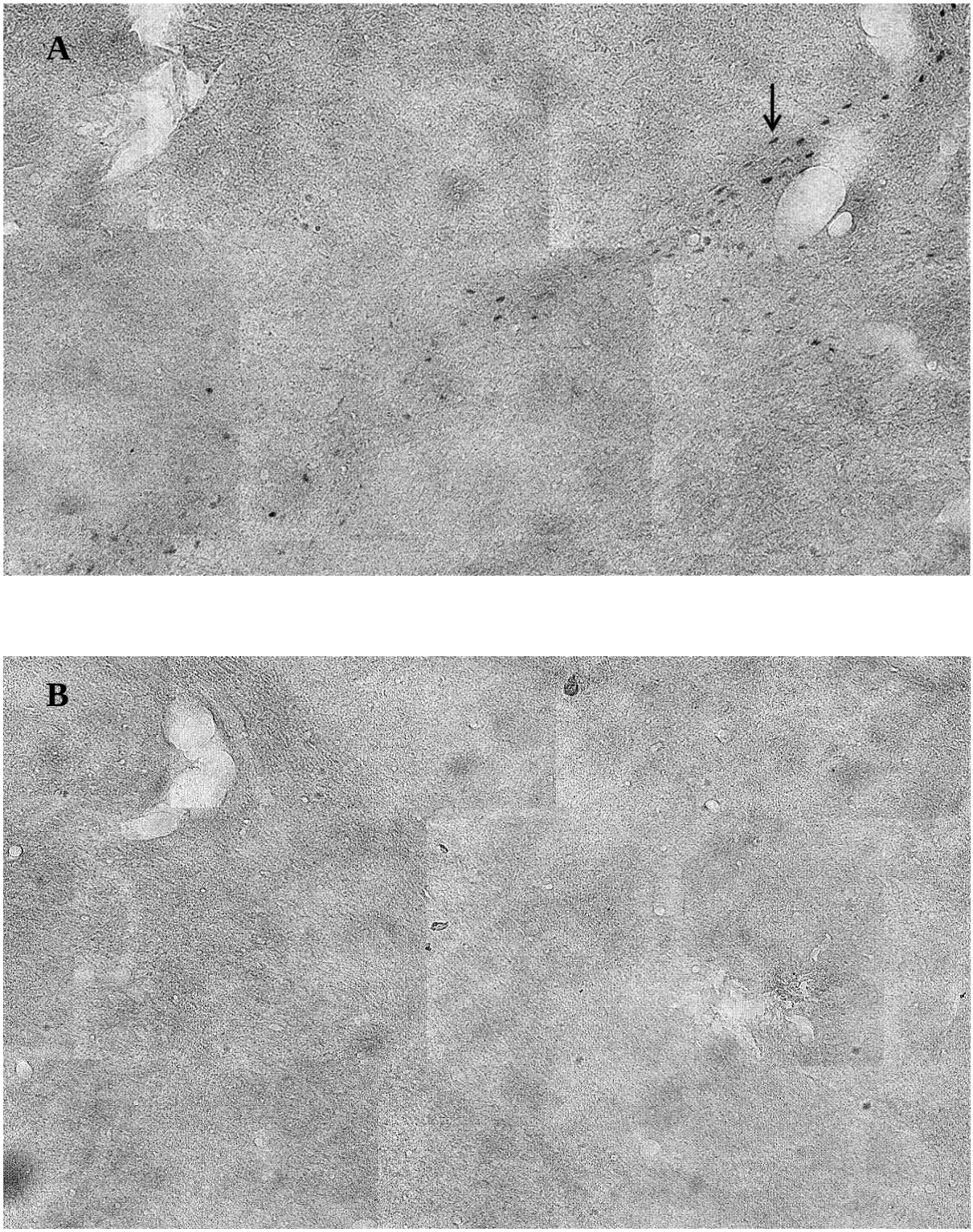

Figure 3.1 *Representative subsections of a coronal section through the substantia nigra immunostained for phospho-c-jun, 6 days after 6-OHDA infusion into the left striatum in an investigation of a potential 6-OHDA dose response. A) Left SN: arrow indicates a cell body positively stained for phospho-c-jun. B) Right SN: no staining was observed.*

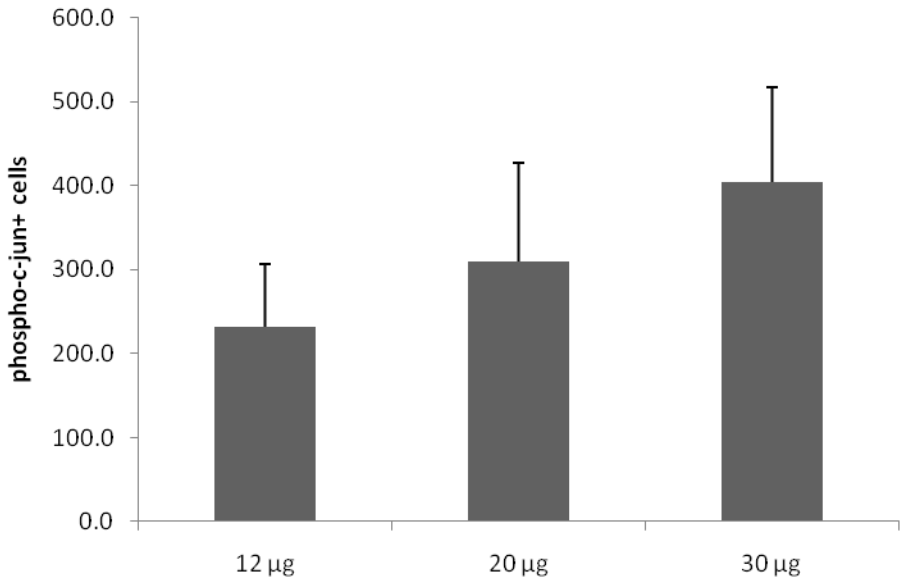

Figure 3.2 *Number of cells in the left substantia nigra positively immunostained for phospho-c-jun, 6 days after infusion into the left striatum of 6-OHDA at 3 different doses (12µg, n=6; 20µg, n=7; 30µg, n=4). No staining was observed in the right substantia nigra. There was no significant effect of dose of 6-OHDA. Data are presented as mean+SEM.*

3.2.1.2.1 Comparison of left and right sides

Repeated measures ANOVA showed a significant effect of lesion on tyrosine hydroxylase staining in the substantia nigra ($F_{1,13}$ = 97.104, p = 0.000). Post hoc analysis showed that cell counts were significantly higher in the right SN than in the left, and this was the case for each dose tested: 12µg (p = 0.000); 20µg (p = 0.000); 30µg (p = 0.001). *See Figs 3.3 and 3.4.*

3.2.1.2.2 Ratio between left and right sides

No effect of dose was observed on percentage ratio between left and right sides.

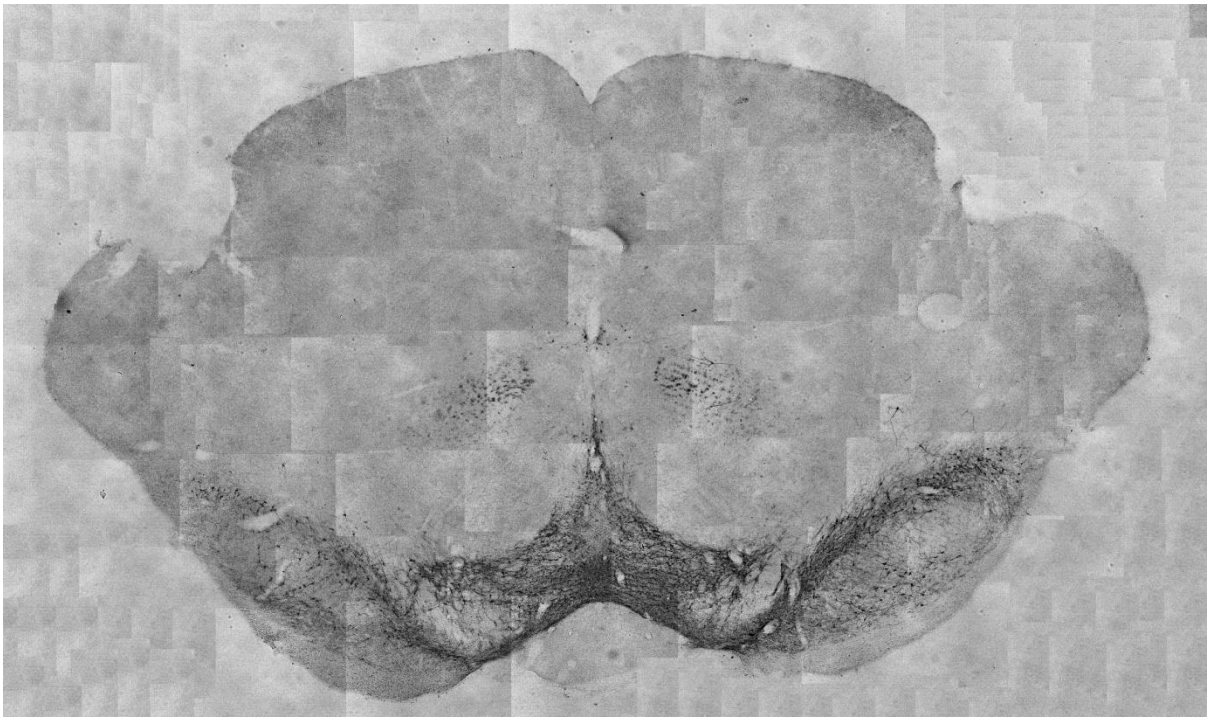

Figure 3.3 *Representative coronal section showing the substantia nigra immunostained for tyrosine hydroxylase, 6 days after infusion of 6-OHDA into the left striatum in an investigation of a potential 6-OHDA dose response. There was significant destruction of dopaminergic cell bodies in the left substantia nigra.*

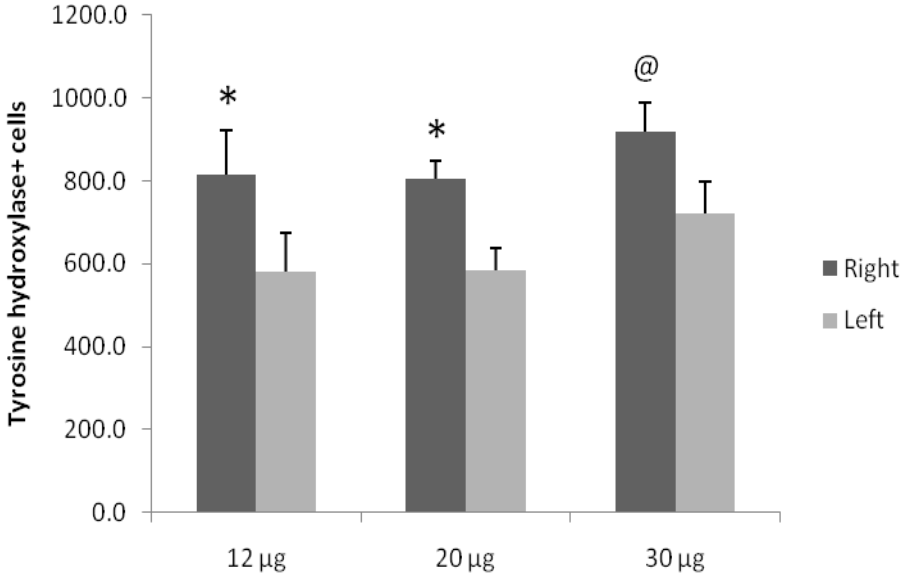

Figure 3.4 *Comparison of number of cells in the right and left substantia nigra positively immunostained for tyrosine hydroxylase, 6 days after infusion into the left striatum of 6-OHDA at 3 different doses (12µg, n=6; 20µg, n=6; 30µg, n=4). Right > left ($p<0.001$): $^{@}p<0.01$, $*p<0.001$. There was no effect of dose. Data are presented as mean+SEM.*

3.2.2 EFFECTS OF MATERNAL SEPARATION AND SEX ON 6-HYDROXYDOPAMINE-INDUCED NEURONAL LOSS: TYROSINE HYDROXYLASE IMMUNOHISTOCHEMISTRY

3.2.2.1 WEIGHT AT SURGERY

Rats were weighed on the day of surgery. Factorial ANOVA showed that male rats weighed significantly more than female rats on lesion day ($F_{1,23} = 252.618$, $p = 0.000$). *See Table 3.1.* There was no significant effect of MS on weight at day of surgery. *See appendix A5.2.2.1.*

3.2.2.2 CELL BODY COUNT IN THE SUBSTANTIA NIGRA

Data were analysed by means of one way ANOVA for percentage ratio of left to right staining. Right and left sides were further compared by means of repeated measures ANOVA. Significant differences ($p < 0.05$) were further compared by means of post hoc Newman Keuls tests. *See appendix A5.2.2.2.2.*

Table 3.1 *Mean ± SEM for weights of rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14 and unilateral 6-OHDA (L) or saline (nL) injection into the left striatum in adulthood. Female < Male, *p<0.001.*

	n	Mass at surgery (g)
nMS Female	6	214.2 ± 5.354 *
nMS Male	6	317.2 ± 6.221
MS Female	7	226.1 ± 7.610 *
MS Male	8	329.3 ± 5.962

Table 3.2 *Mean ± SEM for percentage ratio of left to right SN TH+ cell counts of rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14 and unilateral 6-OHDA (L) or saline (nL) injection into the left striatum in adulthood.*

	n	100*L/R
nMS Female	6	60.7 ± 5.801
nMS Male	6	59.2 ± 7.334
MS Female	7	66.7 ± 8.610
MS Male	8	56.8 ± 9.473

3.2.2.2.1 Ratio of left to right sides

No significant effect of either MS or sex was seen for the ratio between cell counts in the left and right SN. *See Table 3.2.*

3.2.2.2.2 Comparison of left and right sides

Repeated measures analysis of variance showed a significant effect of lesion on cell body counts in the SN ($F_{1,23} = 68.582$, $p = 0.000$). Post hoc analysis showed that cell counts in the right SN were significantly higher than in the left for all groups ($p < 0.05$ in all cases). *See Figs 3.5 and 3.6.*

3.2.2.3 DENSITY OF TYROSINE HYDROXYLASE STAINING IN THE STRIATUM

Section 3.1.2.7.2 describes the calculation of ratio of left to right staining.

Shapiro-Wilk test for normalcy revealed that the ratio of left to right staining in the striatum was not normally distributed ($W = 0.660$, $p = 0.000$). This ratio was therefore analysed by means of the non-parametric Kruskal-Wallis ANOVA by ranks. Staining in the left and right

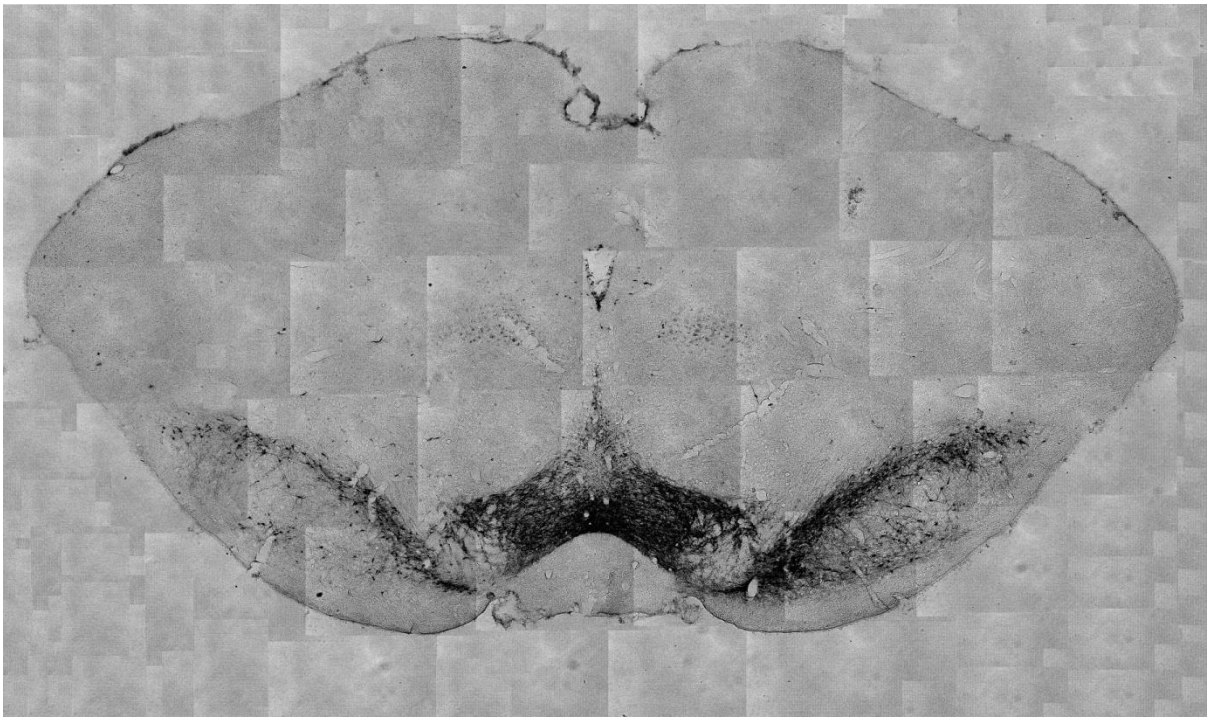

Figure 3.5 *Representative coronal section showing asymmetry of tyrosine hydroxylase immunostaining in the substantia nigra 7 days after infusion of 12µg 6-OHDA into the left striatum in a study of the effects of maternal separation and sex on an unrelated neural insult.*

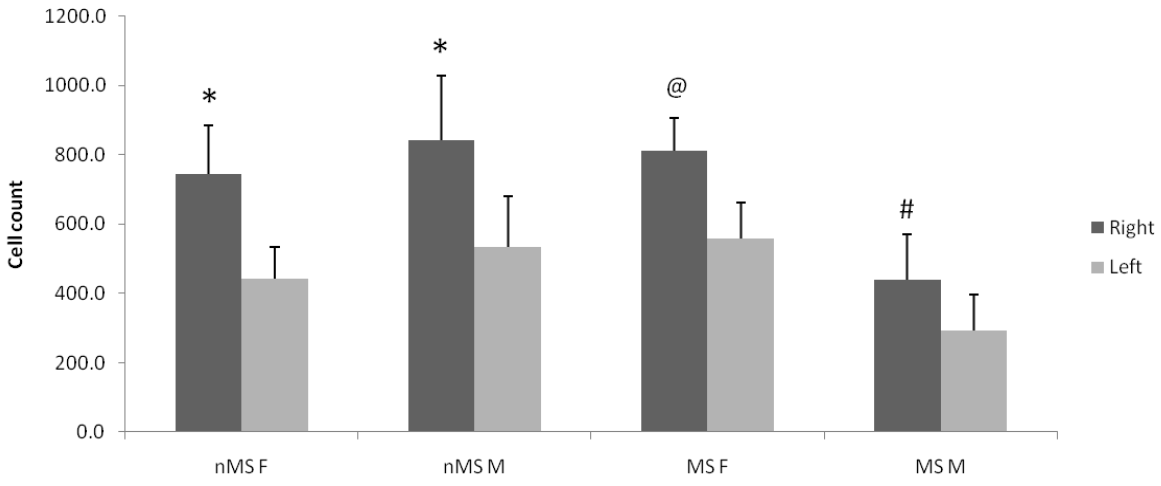

Figure 3.6 *Comparison of number of cells in the right and left substantia nigra positively immunostained for tyrosine hydroxylase, 7 days after infusion of 6-OHDA (12µg) into the left striatum of male (M) and female (F) rats which had been subjected to maternal separation (MS) from P2 to P14. Right > left ($p<0.001$): $^{\#}p<0.05$; $^{@}p<0.01$; $^{*}p<0.001$. There was no effect of MS or sex. Data are presented as mean+SEM. nMSF: n=6; nMSM: n=6; MSF: n=7; MSM: n=8.*

striata was further compared by means of repeated measures ANOVA, with significant effects investigated with post hoc Newman Keuls tests. *See appendix A5.2.2.2.1.*

3.2.2.3.1 Ratio of left to right staining

Kruskal-Wallis ANOVA by ranks revealed no significant effect of MS or of sex on the ratio of left to right staining densities in the striatum. *See Table 3.3.*

3.2.2.3.2 Comparison of left and right sides

Repeated measures ANOVA showed a significant effect of lesion on staining density ($F_{1,21}$ = 28.868, p = 0.000). Post hoc analysis showed that staining in the right striatum was significantly higher than in the left. *See Figs 3.7 and 3.8.*

Table 3.3 *Median [Range] for percentage ratio of left to right TH staining density in the striatum of rats subjected to maternal separation (MS) or no separation (nMS) from P2 to P14 and unilateral 6-OHDA (L) or saline (nL) injection into the left striatum in adulthood.*

	n	100*L/R
nMS Female	4	-1.526 [-39.619 - 6.826]
nMS Male	6	33.548 [-25.800 - 103.434]
MS Female	7	31.494 [-111.533 - 70.798]
MS Male	8	1.355 [-550.068 - 79.127]

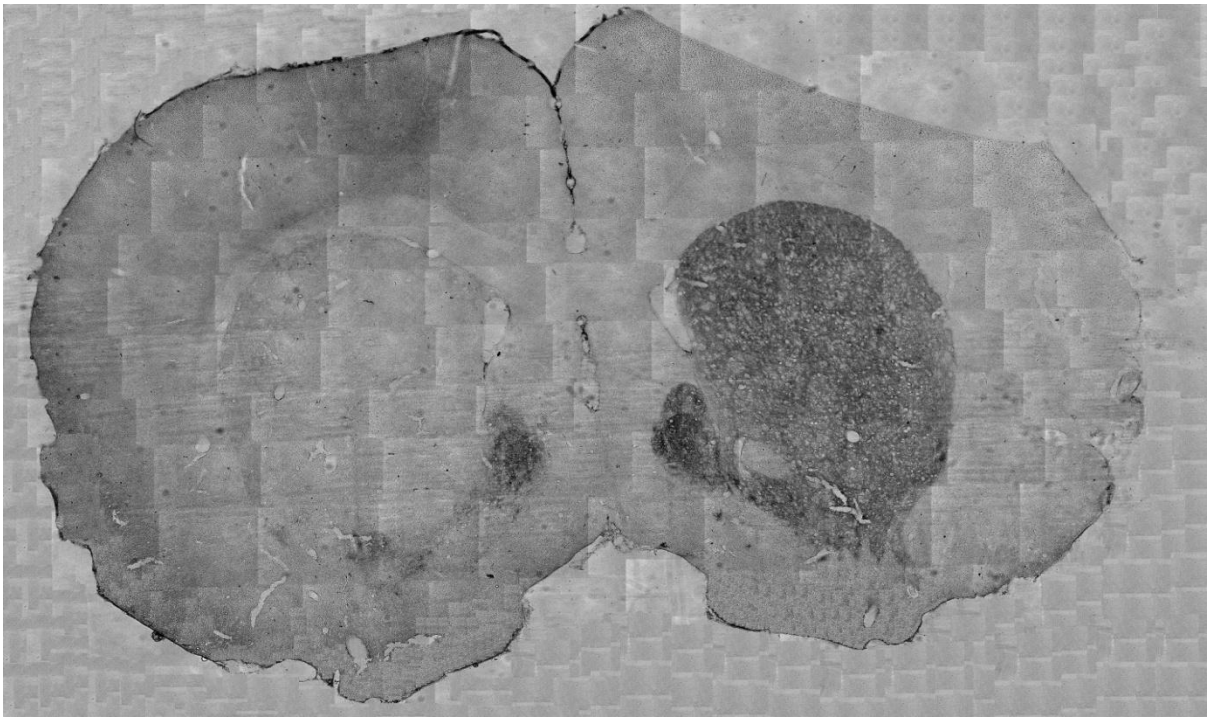

Figure 3.7 *Representative coronal section showing asymmetry of tyrosine hydroxylase immunostaining in the striatum 7 days after infusion of 12µg 6-OHDA into the left striatum in a study of the effects of maternal separation and sex on an unrelated neural insult.*

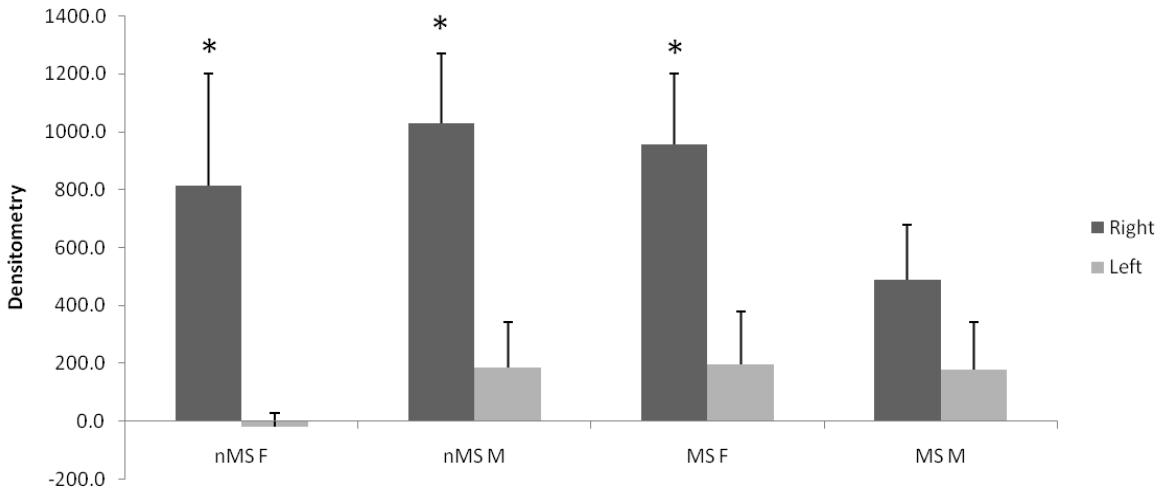

Figure 3.8 *Comparison of tyrosine hydroxylase immunostaining density in the right and left striatum, 7 days after infusion of 6-OHDA (12µg) into the left striatum of male (M) and female (F) rats which had been subjected to maternal separation (MS) from P2 to P14. Right > left ($p<0.001$): *$p<0.05$. There was no effect of MS or sex. Data are presented as mean+SEM. nMSF: n=4; nMSM: n=6; MSF: n=7; MSM: n=8.*

3.3 DISCUSSION

Investigation of the dose response effects of infusion of different concentrations of 6-OHDA showed that a clear lesion was induced in the SN at all three doses. This was seen for both the TH immunohistochemistry, where positive staining neurons were significantly reduced in the ipsilateral SN compared to the non-lesioned side, and for phospho-c-jun immunohistochemistry, where stained neurons were observed only on the side ipsilateral to infusion. No effect of dose on extent of lesion was observed, for either phospho-c-jun or TH. That phospho-c-jun staining was observed in the ipsilateral striatum confirms previous results which demonstrate that 6-OHDA induces the phosphorylation of c-Jun in dopaminergic neurons (Vaudano, Rosenblad & Björklund, 2001), and further supports the concept that 6-OHDA-induced cell death occurs at least partially by means of apoptosis (Beretta *et al*, 2005; Kramer & Mytilineou, 2004), which view has been contested (Jeon, Jackson-Lewis & Burke, 1995). The lack of staining on the contralateral side is in agreement with the fact that the transcriptional activity of c-jun is potentiated by its phosphorylation (Herdegen *et al*, 1998) in response to cell stress (Karin & Gallagher, 2005).

A robust asymmetry of TH immunohistochemical staining was observed in both the striatum and SN of rats infused with 6-OHDA. Comparison of left and right showed a significantly greater number of TH positive neurons in the right SN compared to the left; similarly, TH staining density in the right striatum was significantly greater than the left. No significant effect of MS or sex was observed on staining density.

The lack of effect of MS is in contrast to results which have shown that stress worsens the extent of 6-OHDA lesion (Howells *et al*, 2005; Pienaar *et al*, 2008). Other studies, however, have shown no effect of stress on the extent of lesion (Smith *et al*, 2008; Mabandla & Russell, 2010); these results confirm our behavioural results described earlier, in which MS

did not worsen the effect of the lesion. Increased loss of staining was not observed with increased dose of 6-OHDA, and thus it is possible that the dose used (12µg) induced a maximal neuronal loss, in which case no further loss as a consequence of MS would have been possible. This is not in agreement with research which has shown enhanced loss with increasing doses (Kirik, Rosenblad & Björklund, 1998); in this study, however, the dose was increased by means of multiple injections rather than by simply increasing the concentration injected into one area.

TH staining was performed on brains harvested seven days post lesion. Several studies have suggested that SN neuron damage is not observable this soon after intrastriatal 6-OHDA infusion (Blandini *et al*, 2007; Przedborski *et al*, 1995). However, we saw a significant lesion in the SN at seven days; this has been noted by other researchers (Grealish *et al*, 2008; Mladenović *et al*, 2004) It is likely, however, that a significant further loss of TH neurons in the SN would have occurred if brains had been harvested after a more extended period (Jeon, Jackson-Lewis & Burke, 2005; Martí *et al*, 2002; Smith & Cass, 2007). The investigation of the time-course of 6-OHDA-induced damage was beyond the scope of this study, but differential effects might have been observed at different time-points post-lesion which were not seen at seven days; Pienaar *et al* (2008), observed effects of MS four weeks after 6-OHDA infusion.

This study observed no significant effect of sex on the extent of the lesion. Comparing the effects of 6-OHDA lesion on males and females at adolescence, Pienaar *et al* found that males were more severely lesioned than females (2007). This does not agree with the results of the present study. However, it is likely that if, as mentioned above, 12µg induced a maximal lesion, no further effect of sex would have been possible. Furthermore, Pienaar and colleagues used adolescent rats, while the present study used young adults; the effects of sex hormones might well be expected to be different at adolescence compared to adulthood

(McCormick & Mathews, 2007), and this could well contribute to the different results of our study. Furthermore, the effects of stress on females are dependent to some extent on their hormonal cycle (Rivarola & Suárez, 2009); the female rats used in this study may have been more vulnerable to the effects of toxin infusion at some points in the cycle than at others. Since the female hormonal cycle was not controlled for in this study, the differential effects of gender might have been diluted (Gerrits *et al*, 2003).

Use of the contralateral side as a control for 6-OHDA lesion is controversial. Numerous studies have documented alterations on the non-lesioned side (Araki *et al*, 2000; Sánchez-Iglesias *et al*, 2007). Upregulation of TH expression has been observed on the non-lesioned SN (Kozlowski *et al*, 2004). Ohlsson and colleagues, by contrast, noted reduced DA levels in the contralateral striatum (1995). These results argue against the use of the contralateral side as a control. Other studies, on the other hand, showed no effect of the lesion on the contralateral side (Gomes, Raisman-Vozari & Del Bel, 2008; Henderson *et al*, 2003; Jeon, Jackson-Lewis & Burke, 1995; Przedborski *et al*, 1995) The contralateral side has frequently been used as a control for quantification of TH staining loss (Kirik, Rosenblad & Björklund, 1998; Mabandla & Russell, 2010; Ogura *et al*, 2005; Pienaar *et al*, 2007), and thus its use in the present study is not without precedent. However, given the potential for alterations on the contralateral side, it is possible that effects of MS and sex were masked by the non-use of saline (sham-lesioned) controls.

Although these results were not significant, a tendency towards reduced staining was observed on the right side in both the SN and striatum of male rats previously subjected to MS. This is in agreement with studies which suggest that male rats are more severely affected by MS than female rats (Llorente *et al*, 2009; Pienaar *et al*, 2007; Spivey *et al*, 2009; Wigger & Neumann, 1999). MS has negative effects on the dopaminergic system, with alterations in DA receptor and transporter expression being observed in the striatum as a consequence of

MS (Brake *et al*, 2004); reduction in TH staining suggests that MS may reduce the number of functional DA neurons in the nigrostriatal pathway. This is an extremely interesting finding in the light of the behavioural effects of MS observed in the previous study, where locomotor hyperactivity and possibly enhanced impulsivity were observed. Hyperactivity and impulsivity are two of the symptoms of ADHD (Swanson *et al*, 1998), and a considerable body of evidence suggests that a hypofunctioning DA system underlies these symptoms (Carey *et al*, 1998; Ernst *et al*, 1999; Leo *et al*, 2003; Russell *et al*, 1995; Spencer *et al*, 2007; Volkow *et al*, 2007; Watanabe *et al*, 1997). Furthermore, research suggests that the ADHD-like effects of MS are far more robust in males than in females (Spivey *et al*, 2009), which agrees with the observation in this study of reduced staining in males but not in females. The histological evidence observed in this study is tentative, given that it was not significant, but it is certainly supported, both by the behavioural results in the previous study and by other studies, and further investigation of this effect is warranted.

In conclusion, the results of this study do not support the hypothesis that early developmental stress as exemplified by MS endows an increased vulnerability to the toxicity of 6-OHDA lesion. Moreover, no effect of sex on the extent of the lesion was observed. However, MS appeared to reduce the number of dopaminergic neurons slightly in male rats, which agrees with the behavioural findings of locomotor hyperactivity in maternally separated male rats from the previous study, and suggests that MS may induce an ADHD-like symptomatology both behaviourally and neurochemically.

CHAPTER 4

CONCLUSION

Stress during early development has been shown to result in a variety of deleterious effects. Among these effects is an enhanced vulnerability to the effects of later stress. Moreover, numbers of studies have shown that early developmental stress, in the form of MS, may enhance the toxic effects of an unrelated neural insult.

Based on the above premise, it was hypothesised in the current studies that rats which had been maternally separated during the first two weeks of post-natal life would display an exaggerated behavioural and neurochemical response to the intrastriatal infusion of the selective catecholaminergic neurotoxin 6-OHDA. It was further hypothesised that physical exercise, by means of voluntary access to running wheels, would provide a degree of neuroprotection against the effects of 6-OHDA. A considerable body of evidence suggests that the effects of stress may be dependent on gender, and thus a third aim of this thesis was to investigate whether this held true for the effects of MS and 6-OHDA lesion.

As a consequence of 6-OHDA infusion, a significant lesion was induced at the neurochemical level; significant behavioural effects of the lesion were observed as a consequence. Investigation by means of the "step" and "cylinder" tests, for forelimb akinesia and asymmetry respectively, revealed that the forelimb contralateral to the lesioned striatum was significantly impaired. Similarly, TH immunohistochemical staining of the striatum and substantia nigra showed a significant loss of DA neuron terminals and cell bodies consequent to 6-OHDA infusion. No effect of MS was observed on the extent of the lesion, either behaviourally or neurochemically. There was, moreover, no protective effect of exercise observed on the behavioural extent of the lesion. Sex did not appear to differentially affect the neurochemical extent of the lesion, but a non-significant reduction in TH immunohistochemical staining was observed on the non-lesioned striatum and substantia

nigra of maternally separated male rats. Open field and elevated plus maze behavioural analysis revealed that MS induced a significant locomotor hyperactivity. Voluntary running wheel exercise, by contrast, resulted in a significantly lower level of activity, and behaviour which can be interpreted as more cautious and less impulsive. However, the isolation housing during adolescence undoubtedly confounded the behavioural results to a certain extent.

In conclusion, the results of this study do not support the hypothesis that early developmental stress as exemplified by MS endows an increased vulnerability to the toxicity of 6-OHDA lesion. Exercise does not appear to exert a neuroprotective effect, and sex did not differentially affect the extent of the lesion. However, both MS and exercise induce long-term behavioural effects. The hyperactivity and tendency towards reduced DA neurons in male rats consequent to MS suggests that early developmental stress in rats may induce an ADHD-like symptomatology both behaviourally and neurochemically, which is a finding not without support in the clinical situation.

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APPENDICES

A1. MATERIALS USED

6-hydroxydopamine: Sigma-Aldrich Co.

Antibody to Tyrosine Hydroxylase: Sigma

Anti-mouse antibody: Vector Laboratories

Anti-p-c-jun antibody: Phospho-c-jun (Ser73) antibody from Cell Signalling Technology

Anti-rabbit antibody: Vector Laboratories

Ascorbic acid: Merck Biosciences

Betadine: Adcock-Ingram Pharmaceuticals

Bovine Serum Albumin (powder): Calbiochem

DAB kit: Vector Laboratories

Entellan®: Merck Biosciences

Ethyleneglycol: Merck Biosciences

Gelatine: commercially available

Glycerol: Merck Biosciences

Halothane: Safe-Line Pharmaceuticals

H_2O_2: Merck Biosciences

Jung Tissue Freezing medium: Leica Microsystems

KCl: Merck Biosciences

Ketamine: Anaket-V, Bayer Health Care

KH_2PO_4: Merck Biosciences

NaCl: Merck Biosciences

Na_2HPO_4: Merck Biosciences

NaH_2PO_4: Merck Biosciences

NaOH: Merck Biosciences

Normal Horse Serum: Vector

Paraformaldehyde (powder): Merck Biosciences

Sucrose: Merck Biosciences

Triton® X-100: Merck Biosciences

Vectastain ABC: Vector Laboratories

Xylazine: Rompun® 2%, Bayer Health Care

A2. ADDITIONAL METHODS: SOFTWARE ANALYSES

A2.1 ANALYSIS OF OPEN FIELD AND EPM BEHAVIOUR WITH NOLDUS ETHOVISION XT 5.0

1. Creating a new experiment

- Click on *File.*
- Select *New Experiment.*
- In the *Name* field, enter chosen name.
- Browse to desired saving location, click OK.
- The *Experiment Settings* box opens automatically when an experiment is opened. The defaults were left as set in all analyses described here.

2. Setting up the Trial List

- Click *Setup* menu.
- Select *Trial List* (or double-click *Trial List* in the *Experiment Explorer*).
- Define *Independent Variables.*
    - These define specific experimental conditions (e.g. treatment, gender, age).
    - Click *Add Variable* in the *Trial List* box. A template appears in which aspects of the variable can be defined. Double-click on the relevant aspect.
        - *Label*: In the open field and elevated plus maze the following were included: Rat ID [number code]; Maternal Separation; Running; Lesion; Testing Day.
        - *Variable Type*: Text.
        - *Predefined Values*:

- Double-click on *Predefined Values*; a new window appears.
- In the *Predefined Value* field, enter a value for the relevant independent variable (for Maternal separation, Running and Lesion values were either 0 or 1, and for Testing Day P49 or P63).
- Click *Add*. This value moves to the Predefined Values Field.
- Repeat for all values.
- Clear the *Allow Other Values* check box for all variables except Rat ID.
- Click *OK*.

- Adding Trials
    - Click *Add Trials.*
    - Type in the number of trials you wish to add (e.g. 6 trials for 6 open field tests to be analysed).
    - Click *OK.*

3. Setting up the Arena

The arena is the area in which the subject (i.e. the rat) is detected.

3.1 Creating the Arena

- Double-click on *Arena Settings* in the *Experiment Explorer.*
- *Grab Background Image* window opens:
    - Click *Browse.*
    - Select the video file from which the background is to be drawn, and click *Open.*
    - When the video window opens, navigate to the frame desired and click *Grab*.

- In the *Arena Settings* window:
    - Click the *Arena 1* row.
    - Select a drawing object from the drawing toolbar by clicking on the object. In the Open Field successive straight lines were used to create a square that covered the desired arena (i.e. that outlined the floor of the open field). In the Elevated Plus Maze successive straight lines were used to outline the "plus" shape of the maze.
    - Shift the *Arena label* in the video window so that the point is inside the created Arena.
    - Double click on the *Arena Label* in the video window and type the name in the *Edit Name* window.

3.2 Creating the Zones

Specific zones of interest can be created within an arena. In the open field these are the outer zone and the inner zone; in the Elevated Plus Maze these are the open arms, the inner arms and the central square. Differential behaviour between these zones can be used to measure the effects of interventions such as maternal separation or exercise.

- In the Arena Settings window, click on *Zone Group.*
    - Select a drawing object from the drawing toolbar and create a shape that covers the zone of interest. In the open field successive straight lines were used to create a square that followed the outline of the inner zone. In the Elevated Plus Maze lines were used to outline four perpendicular rectangles defining the arms of the maze, and a square for the central square.
    - Click on *Label Zone* on the drawing toolbar and click in the created shape. This step can be repeated for every zone in the group. For the open field, the

two zones were labelled by directing the zone label point inside the zone square for the inner zone, and outside for the outer zone. For the Elevated Plus Maze, five zones were labelled.

  - Double click on the *Zone Label* in the video window and type the zone name in the *Edit Name* window.

- Creating Cumulative Zones
  - For the Elevated Plus Maze, two cumulative zones (Open Arms and Closed Arms) were created
  - In the *Arena Settings window*, click on the zone group in which the desired cumulative zone is to be created
  - Click *Add Cumulative Zone*
  - In the Add Cumulative Zone window:
    - Either: create new cumulative zone, and type in the name of the new zone
    - Or: use an existing cumulative zone and select name from the drop down list

3.3 Calibrating the Arena

Calibration converts pixel coordinates to real coordinates; i.e. the pixel distance on the screen is converted to a real-life distance. This enables the software to determine such variables as distance travelled and velocity.

  - In the *Arena Settings* window, select *Calibration.*
  - Click *Create Calibration Scale icon* on the drawing objects toolbar.
  - Click the mouse pointer on a feature of the Arena in the background image, drag it to another feature and release the button. This will be the distance

calibrated. In the open field floor length was calibrated along the walls and along the sides of the inner zone. In the Elevated Plus Maze the length and width of the arms and the length of the square sides were calibrated.

- In the *Calibration Distance window*, type in the real distance between the two pixel coordinates (Open field: outer zone sides - 100cm; inner zone sides - 70cm; Elevated Plus Maze: Arm length – 45cm; Arm width – 10cm; Square sides – 10cm).

4. Preparing Data Acquisition

4.1 Trial Control

This allows the definition of conditions which determine when tracking starts and stops.

- Click *Setup* menu
- Click *Trial Control Settings*
- In the *Trial Control Settings window*, select *New* and enter a name.
- Click *OK*.
- The *Trial Control Window* contains 6 boxes. In the fourth box (the second *Condition* box) click *Settings.* This allows definition of the time length of the trial.
- In the *Time Condition Window*, select *After a delay of* and type in the required delay. In the open field, tracking was set to stop 498 seconds after the start. This was a result of time "shrinkage": when files were recorded, a ten minute file played back for eight minutes and twenty seconds. In the Elevated Plus Maze tracking was set to stop 248 seconds after the start.

4.2 Detection Settings

- Click *Setup* menu

- Click *Detection Settings*
- Select *Detection Settings 1* and click *OK*.
- The *Video window* will show the last video selected in the Arena settings or in Data Acquisition. In the *Detection Settings Window*, click *Browse* and select the desired video file.
- Select *Dynamic Subtraction*
- Click the *Grab* button when the subject is not in the arena. Repeat until noise is absent. Click *OK.*
- This step was repeated for every trial, with a new *Detection Setting* being opened each time.

5. Acquiring Data

- Click *Acquisition* menu
- Select *Open Acquisition*
- In the *Acquisition Control Window*, select *Detection Determines Speed*
- In the *Acquisition Method Window*, select *Edit Independent Variables After Trial*
- In the *Acquisition Method Window*, click *Show Independent Variables*: this shows the trial list and enables the addition of any relevant information (e.g. rat code/ ID). Click *OK*.
- Using the *Playback Control Window*, position the video at the point where data acquisition is to start (in the case of the open field and elevated plus maze, this was just as the rat was placed in the arena).
- Click the *Start Trial* button in the *Acquisition Control Window*.

- The trial stops automatically once the predefined time limit is reached and the Independent Variables Window appears: add the relevant values for that trial and click *OK*.
- Repeat for next trial.

6. Selecting Data for Analysis

This was used for time bins analysis of tracks.

- Click *Select* menu.
- Choose *Data Profile.*
- Choose *New* (or choose a previously defined Data Profile if components are identical).
- Type in desired name and click *OK.*
- If the entire trial is to be analysed, proceed to Statistics Calculation (see below).
- If time bins are to be analysed, proceed as follows.
    - In the *Data Profile Window,* click the button in the bottom right corner of the *Results* box.
    - Select *Use Time Bins* and type in the desired length (50 seconds in the case of the open field and the Elevated Plus).
    - Click *OK.*

7. Calculating Statistics

This converts the tracking data for each trial into usable statistics.

- Click *Select* menu.
- Choose *Analysis Profile.*

- In the *Analysis Profile Window*, select *New* and type a name for the new profile. Alternatively, select an already defined Analysis Profile that contains the desired components.
- Click *OK*.
- In the *Dependent Variables* screen, click *Add* next to the dependent variable to be used in the analysis. Multiple dependent variables can be included in one profile.
- In the *Dependent Variable-specific tab,* select the properties of that dependent variable. In the *Statistics tab,* select the statistics to be calculated for that variable.
    - For the open field, the following dependent variables were analysed (selected statistics are shown in brackets):
        - Distance moved (total);
        - Velocity (mean, maximum);
        - In zone: arena, outer zone, inner zone (latency, frequency, duration).
    - In the Elevated Plus Maze, the following variables were analysed:
        - Distance moved (total);
        - Velocity (mean, maximum);
        - In zone: arena, open arms, closed arms (frequency, duration).
- Click *Analyze* menu.
- Select *Calculate Statistics.*

8. Exporting Statistics

This exports the trial statistics from the Ethovision file to a spreadsheet format. From there overall statistics can be calculated using a separate statistics package.

- Click *Export* menu.
- Under *File,* select the name and location of the export file.

- Under *File Type*, select *Excel*.
- Click *OK*.

A2.2 STEP BY STEP METHODOLOGY FOR IMMUNOHISTOCHEMICAL DENSITOMETRICAL MEASUREMENTS

Click on the *Axiovert icon* on the desktop.

1. Taking digital photographs

- In *Work-area explorer*:

  - Click *Microscope*: convert lightpath from 100% ocular to 50/50 ocular/ camera
  - Click *Camera*

- Above Work-area:

  - Click on *Objective icon*: select desired objective
  - Click on *Reflector icon*: select *01 DAPI*
  - Click on *Condenser icon*: select *brightfield* from dropdown menu

- Position slide on microscope stage and focus

- Click *Live icon* to obtain "camera view" on screen

  - Click *Overexposure* icon under the *Live window*: correctly exposed image should appear in grayscale, so any red indicates overexposure
    - On the *Work-area*, reduce the exposure until all red disappears
    - Exposure MUST remain the same for all images taken of the same section
  - Shift slide until desired view is obtained onscreen, at optimal focus
  - Click on *Camera icon* at bottom left of the *Live window* to record the current image
  - Save the digital photograph:
    - *File menu*
    - *Save as*

- Navigate to desired location
- Save as file type *.zvi*

2. Densitometric Measurements

- In *Work-area explorer*

- Expand *Interactive Measurement*
  - Click *Load Tools*
    - Click button next to *Configuration File*
    - Select *Densitometry_BF.zmi*
    - Click *OK*
  - Click *Start Measurement*
    - Click *Start*
    - In the *Start Measurement* window, select *Outline icon*
    - Left click within the image to start area definition
    - Outline area to be measured
    - Right click to close area
    - Click *OK* to end measurement of that image
  - Under *Measure*
    - Click *Create Data Table* (this organises all measurements into a table/ list that can then be opened in Excel for later analysis)
    - Select *Table* from drop-down menu (default setting is *List*)
    - Click *Start*
    - Save Table
      - *File menu*
      - *Save As*

- Navigate to desired location
- File Type: *.csv*

A3. RECIPES

A3.1 ANTIFREEZE MEDIUM

- This can be used for long-term freezer storage of sections.
- Must not be used at temperatures below -19°C as the medium freezes at -20°C.
- Can be reused many times: filter before reuse

Reagents

- 17.44g Na_2HPO_4
- 5.024g NaH_2PO_4
- 960mL ethylene glycol
- 960mL glycerol

Method

- Combine all reagents and stir until salts are dissolved. This must take place under a fume hood as ethylene glycol is toxic. For the same reason gloves must be used whenever the solution is handled.

A3.2 GELATINISATION OF SLIDES

Reagents

- 5g gelatine powder
- 500mL dH_2O

Method

- Add gelatine powder to water and heat in water bath, swirling occasionally, until gelatine is dissolved.
- Dip slides in detergent and rinse thoroughly in dH_2O
- Dip slides into gelatine
- Incubate slides at approximately 37°C for 4 hours
- Re-dip slides in gelatine and return to 37°C incubator overnight

- gelatine solution MUST be kept at 4°C, as it goes off quickly at room temperature; should not be kept for more than a month at most

- reheat gently until clear when needed

A3.3 4 % PARAFORMALDEHYDE

Reagents

- 500 mL 0.2M PBS, pH 7.4
- 500 mL dH_2O
- 40g paraformaldehyde powder
- Saturated NaOH solution (111g NaOH in 100mL dH_2O)

Method

- Heat dH_2O to approximately 55°C
- Add to paraformaldehyde powder
- Stirring constantly (magnetic stirrer), allow solution to remain at 55° - 65° C for a few minutes (milky-white solution)
- Add a few drops of NaOH; continue to stir until solution is clear
- Add 0.2M PBS to make up to 1L

A3.4 PHOSPHATE-BUFFERED SALINE (PBS)

	0.1M: g/L	1.0M: g/L
NaCl	8	80
Na_2HPO_4	1.26	12.6
KCl	0.2	2.0
KH_2PO_4	0.2	2.0

- Dissolve chemicals in 800 mL dH2O
- pH to 7.4
- Make up to 1L with dH2O
- For convenience, make up 1L stock (1.0M) and dilute 1:10 for 0.1M buffer when needed

A3.5 SALT-FREE PHOSPHATE BUFFER

Stock solutions

- 0.2M Monobasic stock
    - Dissolve 13.9g NaH_2PO_4 in 500mL dH_2O
- 0.2M Dibasic stock
    - Dissolved 53.65g Na_2HPO_4 in 1L dH_20

0.1M buffer (pH 7.4)

- 57mL monobasic stock
- 243mL dibasic stock
- Combine and make up to 600mL with dH_20

A4. POST-OPERATIVE CARE SHEET

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Food										
Water										
Decreased activity										
Self-mutilation										
Piloerection										
Hunching or abnormal stance										
Rapid or shallow respiration										
Tremors										

A5 STATISTICS APPENDIX

APPENDIX A5.1.1 WEIGHTS

A5.1.1.1 Study 1 Weights Spreadsheet

	MS	Running	Lesion	P28	P35	P49	P63
129	1	1	1	67.4	82.5	158.0	252.5
164	1	1	0	56.5	74.5	152.0	218.3
141	1	0	1	66.5	104.0	184.0	277.0
148	1	0	0	66.0	106.0	171.5	258.5
207	0	1	1	66.3	102.5	188.5	301.2
174	0	1	0	59.0	94.8	162.6	240.8
227	0	0	1	60.5	99.3	161.0	212.7
176	0	0	0	61.8	98.8	130.0	200.5
122	1	1	0	55.6	86.7	140.4	
195	1	1	1	59.5	96.5	191.2	
154	1	0	1	48.5	83.0	153.3	
197	1	0	0	53.2	86.0	137.0	
135	1	0	1	62.0	99.7	182.0	
203	0	1	1	66.5	96.1	146.8	235.8
222	0	1	0	66.7	101.2	168.0	277.0
193	0	0	1	67.0	107.2	170.0	273.0
167	0	0	0	65.0	93.7	117.0	188.5
182	1	1	1	64.5	100.9	125.2	247.8
216	1	1	0	64.0	103.6	175.8	293.7
209	1	0	1	58.5	94.8	175.0	261.0
144	1	0	0	69.5	109.6	199.7	297.8
188	0	1	1	66.5	97.7	174.1	272.5
234	0	0	1	59.2	91.6	154.4	247.9
117	0	0	1	56.5	89.3	136.2	240.5
169	0	0	0	60.0	97.2	157.5	255.8
220	1	1	1	69.0	97.6	178.5	282.9
138	1	1	0	61.0	96.1	178.6	279.0
157	1	0	1	66.2	109.0	188.8	272.3
186	1	0	0	55.9	94.2	163.5	269.9
191	0	1	1	65.1	93.9	154.8	252.3
131	0	1	0	57.9	87.1	155.8	247.1
126	0	0	1	62.5	100.7	151.3	223.6
160	0	0	0	63.7	97.8	168.7	257.1
196	1	1	0	68.6	101.1	163.5	272.5
145	1	1	1	73.6	105.4	180.1	293.8
198	1	1	1	67.8	107.5	169.0	267.9
143	1	0	1	66.8	105.2	191.0	293.0
139	1	0	0	66.9	98.9	186.4	278.5
190	1	0	0	74.3	118.6	204.8	313.5

210	0	1	1	75.0	114.5	178.2	278.3
	MS	**Running**	**Lesion**	**P28**	**P35**	**P49**	**P63**
232	0	1	0	74.7	108.3	191.8	285.7
137	0	1	1	70.4	100.3	172.9	271.9
205	0	0	1	73.6	114.0	178.6	284.8
219	0	0	0	72.5	108.2	192.8	292.8
171	0	0	0	72.3	100.5	174.4	266.9
271	1	1	0	59.8	85.7	139.0	195.8
250	1	0	0	59.2	85.2	139.9	197.1
301	0	1	1	68.9	90.5	126.6	249.0
305	0	1	0	63.5	85.5	134.1	254.5
306	1	1	1	56.6	83.9	121.9	223.5
309	1	0	1	45.4	72.0	122.2	205.0
312	0	1	1	55.2	83.0	129.3	218.2
314	0	1	0	54.9	83.2	156.8	236.8
313	0	1	0	64.0	98.3	182.3	251.3
315	0	0	0	61.9	88.8	156.9	233.5
311	0	0	0	52.3	74.1	121.3	205.7
317	1	1	1	67.6	97.9	157.5	249.7
318	1	1	0	69.4	96.8	168.3	265.0
320	1	1	1	72.9	93.5	178.9	279.1
319	1	1	0	76.8	105.0	162.8	275.8
323	0	1	0	62.6	94.4	156.9	256.3
324	0	1	0	55.5	89.3	160.8	259.9
322	0	0	1	50.2	82.2	116.8	198.6

A5.1.1.2. Study 1 Weights: descriptive statistics

	Descriptive Statistics (Weights)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	P28 Mean	P28 Std.Dev.	P28 Std.Err	P28 -95.00%	P28 +95.00%
Total				58	64.1793	6.66424	0.87505	62.4270	65.9315
MS	0			32	63.4906	6.48851	1.14701	61.1512	65.8299
MS	1			26	65.0269	6.90655	1.35448	62.2373	67.8165
Running	0			26	62.8538	7.17814	1.40775	59.9545	65.7531
Running	1			32	65.2562	6.11860	1.08162	63.0502	67.4622
Lesion	0			30	63.8733	6.37775	1.16441	61.4918	66.2548
Lesion	1			28	64.5071	7.06079	1.33436	61.7692	67.2450
MS*Running	0	0		15	62.6000	6.86793	1.77329	58.7966	66.4033
MS*Running	0	1		17	64.2764	6.23683	1.51265	61.0697	67.4831
MS*Running	1	0		11	63.2000	7.90885	2.38461	57.8867	68.5132
MS*Running	1	1		15	66.3666	5.99626	1.54823	63.0460	69.6872
MS*Lesion	0	0		17	62.8411	6.23899	1.51317	59.6333	66.0489
MS*Lesion	0	1		15	64.2266	6.90253	1.78222	60.4041	68.0491
MS*Lesion	1	0		13	65.2230	6.55110	1.81694	61.2642	69.1818
MS*Lesion	1	1		13	64.8307	7.50837	2.08244	60.2935	69.3680
Running*Lesion	0	0		14	64.3785	6.44362	1.72213	60.6581	68.0990
Running*Lesion	0	1		12	61.0750	7.85008	2.26612	56.0872	66.0627
Running*Lesion	1	0		16	63.4312	6.49684	1.62421	59.9693	66.8931
Running*Lesion	1	1		16	67.0812	5.29681	1.32420	64.2587	69.9037
MS*Running*Lesion	0	0	0	8	63.6875	6.58557	2.32835	58.1818	69.1931
MS*Running*Lesion	0	0	1	7	61.3571	7.48884	2.83051	54.4311	68.2831
MS*Running*Lesion	0	1	0	9	62.0888	6.20875	2.06958	57.3164	66.8613
MS*Running*Lesion	0	1	1	8	66.7375	5.63735	1.99310	62.0245	71.4504
MS*Running*Lesion	1	0	0	6	65.3000	6.74181	2.75233	58.2249	72.3751
MS*Running*Lesion	1	0	1	5	60.6800	9.21992	4.12327	49.2319	72.1280
MS*Running*Lesion	1	1	0	7	65.1571	6.92431	2.61714	58.7532	71.5610
MS*Running*Lesion	1	1	1	8	67.4250	5.29818	1.87319	62.9956	71.8543

Effect	Descriptive Statistics (Weights)								
	Level of Factor	Level of Factor	Level of Factor	N	P35 Mean	P35 Std.Dev.	P35 Std.Err	P35 -95.00%	P35 +95.00%
Total				58	96.439	10.0683	1.32203	93.7923	99.087
MS	0			32	95.750	9.2436	1.63406	92.4172	99.082
MS	1			26	97.288	11.1272	2.18223	92.7940	101.782
Running	0			26	97.726	11.3084	2.21776	93.1593	102.294
Running	1			32	95.393	8.9857	1.58847	92.1540	98.633
Lesion	0			30	95.883	10.1055	1.84500	92.1098	99.656
Lesion	1			28	97.035	10.1787	1.92360	93.0888	100.982
MS*Running	0	0		15	96.226	10.1934	2.63193	90.5817	101.871
MS*Running	0	1		17	95.329	8.6158	2.08964	90.8995	99.759
MS*Running	1	0		11	99.772	12.8938	3.88765	91.1105	108.435
MS*Running	1	1		15	95.466	9.6923	2.50256	90.0992	100.834
MS*Lesion	0	0		17	94.188	8.8330	2.14232	89.6467	98.729
MS*Lesion	0	1		15	97.520	9.6806	2.49952	92.1590	102.881
MS*Lesion	1	0		13	98.100	11.5485	3.20300	91.1212	105.078
MS*Lesion	1	1		13	96.476	11.0973	3.07786	89.7708	103.183
Running*Lesion	0	0		14	97.971	11.0521	2.95381	91.5901	104.352
Running*Lesion	0	1		12	97.441	12.0877	3.48943	89.7614	105.121
Running*Lesion	1	0		16	94.056	9.1619	2.29048	89.1741	98.938
Running*Lesion	1	1		16	96.731	8.8945	2.22363	91.9916	101.470
MS*Running*Lesion	0	0	0	8	94.887	10.0601	3.55680	86.4769	103.298
MS*Running*Lesion	0	0	1	7	97.757	10.9201	4.12742	87.6577	107.856
MS*Running*Lesion	0	1	0	9	93.566	8.1587	2.71957	87.2953	99.838
MS*Running*Lesion	0	1	1	8	97.312	9.2255	3.26170	89.5997	105.025
MS*Running*Lesion	1	0	0	6	102.083	11.8487	4.83724	89.6488	114.517
MS*Running*Lesion	1	0	1	5	97.000	14.9171	6.67113	78.4779	115.522
MS*Running*Lesion	1	1	0	7	94.685	10.9671	4.14518	84.5428	104.828
MS*Running*Lesion	1	1	1	8	96.150	9.1458	3.23353	88.5039	103.796

	Descriptive Statistics (Weights)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	P49 Mean	P49 Std.Dev.	P49 Std.Err	P49 -95.00%	P49 +95.00%
Total				58	161.432	22.3375	2.9330	155.559	167.306
MS	0			32	157.100	21.5491	3.8093	149.330	164.869
MS	1			26	166.765	22.5440	4.4212	157.659	175.871
Running	0			26	162.065	26.3409	5.1658	151.426	172.704
Running	1			32	160.918	18.9023	3.3414	154.103	167.733
Lesion	0			30	163.116	21.6846	3.9590	155.019	171.213
Lesion	1			28	159.628	23.2765	4.3988	150.602	168.654
MS*Running	0	0		15	152.460	23.5362	6.0770	139.426	165.493
MS*Running	0	1		17	161.194	19.4165	4.7092	151.211	171.177
MS*Running	1	0		11	175.163	25.1387	7.5796	158.275	192.052
MS*Running	1	1		15	160.606	18.9763	4.8996	150.097	171.115
MS*Lesion	0	0		17	158.100	22.1476	5.3716	146.712	169.487
MS*Lesion	0	1		15	155.966	21.5650	5.5680	144.024	167.909
MS*Lesion	1	0		13	169.676	20.0017	5.5474	157.590	181.763
MS*Lesion	1	1		13	163.853	25.3057	7.0185	148.561	179.146
Running*Lesion	0	0		14	163.171	28.1605	7.5262	146.912	179.430
Running*Lesion	0	1		12	160.775	25.2258	7.2820	144.747	176.802
Running*Lesion	1	0		16	163.068	14.8932	3.7233	155.132	171.004
Running*Lesion	1	1		16	158.768	22.5109	5.6277	146.773	170.764
MS*Running*Lesion	0	0	0	8	152.325	27.1245	9.5899	129.648	175.001
MS*Running*Lesion	0	0	1	7	152.614	20.8360	7.8752	133.344	171.884
MS*Running*Lesion	0	1	0	9	163.233	16.5610	5.5203	150.503	175.963
MS*Running*Lesion	0	1	1	8	158.900	23.1712	8.1922	139.528	178.271
MS*Running*Lesion	1	0	0	6	177.633	24.3433	9.9381	152.086	203.180
MS*Running*Lesion	1	0	1	5	172.200	28.6185	12.7985	136.665	207.734
MS*Running*Lesion	1	1	0	7	162.857	13.7382	5.1925	150.151	175.562
MS*Running*Lesion	1	1	1	8	158.637	23.4292	8.2835	139.050	178.224

Effect	Descriptive Statistics (Weights)								
	Level of Factor	Level of Factor	Level of Factor	N	P63 Mean	P63 Std.Dev.	P63 Std.Err	P63 -95.00%	P63 +95.00%
Total				58	255.024	30.3246	3.9818	247.050	262.997
MS	0			32	249.078	28.5477	5.0465	238.785	259.370
MS	1			26	262.342	31.3867	6.1554	249.664	275.019
Running	0			26	250.211	36.2490	7.1090	235.570	264.852
Running	1			32	258.934	24.4124	4.3155	250.132	267.736
Lesion	0			30	254.186	32.7263	5.9749	241.966	266.406
Lesion	1			28	255.921	28.0959	5.3096	245.027	266.815
MS*Running	0	0		15	238.793	33.1121	8.5495	220.456	257.130
MS*Running	0	1		17	258.152	20.8083	5.0467	247.454	268.851
MS*Running	1	0		11	265.781	35.8853	10.8198	241.673	289.889
MS*Running	1	1		15	259.820	28.6918	7.4082	243.931	275.709
MS*Lesion	0	0		17	247.658	28.5109	6.9149	232.999	262.317
MS*Lesion	0	1		15	250.686	29.5020	7.6174	234.349	267.024
MS*Lesion	1	0		13	262.723	36.9478	10.2474	240.395	285.050
MS*Lesion	1	1		13	261.961	26.2087	7.2689	246.123	277.799
Running*Lesion	0	0		14	251.150	40.2360	10.7535	227.918	274.381
Running*Lesion	0	1		12	249.116	32.7203	9.4455	228.327	269.906
Running*Lesion	1	0		16	256.843	25.5227	6.3806	243.243	270.443
Running*Lesion	1	1		16	261.025	23.8942	5.9735	248.292	273.757
MS*Running*Lesion	0	0	0	8	237.600	36.7202	12.9825	206.901	268.298
MS*Running*Lesion	0	0	1	7	240.157	31.3228	11.8389	211.188	269.126
MS*Running*Lesion	0	1	0	9	256.600	15.9623	5.3207	244.330	268.869
MS*Running*Lesion	0	1	1	8	259.900	26.3039	9.2998	237.909	281.890
MS*Running*Lesion	1	0	0	6	269.216	40.4483	16.5129	226.768	311.664
MS*Running*Lesion	1	0	1	5	261.660	33.6953	15.0690	219.821	303.498
MS*Running*Lesion	1	1	0	7	257.157	35.8969	13.5677	223.958	290.356
MS*Running*Lesion	1	1	1	8	262.150	22.9923	8.1290	242.928	281.372

A5.1.1.3. Study 1 Weights: P28 ANOVA

Effect	Univariate Tests of Significance for P28 (Weights Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	250662.6	1	250662.6	5268.268	0.000000
MS	0.4	1	0.4	0.009	0.924615
Running	130.9	1	130.9	2.752	0.102849
Lesion	0.2	1	0.2	0.004	0.948042
MS*Running	15.8	1	15.8	0.332	0.566854
MS*Lesion	17.0	1	17.0	0.358	0.552160
Running*Lesion	191.2	1	191.2	4.018	0.049951
MS*Running*Lesion	0.0	1	0.0	0.000	0.994789
Error	2616.9	55	47.6		

A5.1.1.4. Study 1 Weights: P28 post hoc Newman Keuls

Cell No.	Running	Lesion	{1} 63.633	{2} 60.243	{3} 62.971	{4} 66.635
	Newman-Keuls test; variable P28 (Weights) Approximate Probabilities for Post Hoc Tests Error: Between MS = 47.580, df = 55.000					
1	0	0		0.361207	0.789295	0.228867
2	0	1	0.361207		0.273699	0.057495
3	1	0	0.789295	0.273699		0.305647
4	1	1	0.228867	0.057495	0.305647	

A5.1.1.5. Study 1 Weights: P35 ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
	Univariate Tests of Significance for P35 (Weights Sigma-restricted parameterization Effective hypothesis decomposition				
Intercept	575849.1	1	575849.1	5355.242	0.000000
MS	2.3	1	2.3	0.021	0.885156
Running	48.6	1	48.6	0.452	0.504228
Lesion	21.7	1	21.7	0.202	0.655113
MS*Running	12.1	1	12.1	0.113	0.738099
MS*Lesion	70.7	1	70.7	0.657	0.421050
Running*Lesion	59.0	1	59.0	0.548	0.462121
MS*Running*Lesion	35.4	1	35.4	0.329	0.568517
Error	5914.1	55	107.5		

A5.1.1.6. Study 1 Weights: P49 ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
	Univariate Tests of Significance for P49 (Weight Sigma-restricted parameterization Effective hypothesis decomposition				
Intercept	1627559	1	1627559	3178.603	0.000000
MS	1405	1	1405	2.744	0.103337
Running	10	1	10	0.020	0.888471
Lesion	7	1	7	0.015	0.904340
MS*Running	1379	1	1379	2.694	0.106429
MS*Lesion	28	1	28	0.054	0.817264
Running*Lesion	2	1	2	0.004	0.948451
MS*Running*Lesion	59	1	59	0.115	0.736310
Error	28162	55	512		

A5.1.1.7 Study 1 Weights: P63 ANOVA

Effect	Univariate Tests of Significance for P63 (Weigh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	3671294	1	3671294	3959.467	0.000000
MS	2747	1	2747	2.963	0.091375
Running	649	1	649	0.699	0.406939
Lesion	10	1	10	0.010	0.919668
MS*Running	2223	1	2223	2.398	0.127802
MS*Lesion	62	1	62	0.067	0.796559
Running*Lesion	155	1	155	0.167	0.684202
MS*Running*Lesion	122	1	122	0.132	0.717847
Error	46361	50	927		

A5.1.1.8. Weights: Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Weigh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	4704694	1	4704694	4459.178	0.000000
MS	2719	1	2719	2.577	0.114741
Running	59	1	59	0.056	0.813941
Lesion	12	1	12	0.012	0.914940
MS*Running	2174	1	2174	2.061	0.157356
MS*Lesion	184	1	184	0.174	0.678148
Running*Lesion	213	1	213	0.202	0.654842
MS*Running*Lesion	118	1	118	0.112	0.739000
Error	52753	50	1055		
TIME	1203458	3	401153	2296.373	0.000000
TIME*MS	1804	3	601	3.443	0.018388
TIME*Running	881	3	294	1.682	0.173352
TIME*Lesion	170	3	57	0.324	0.807670
TIME*MS*Running	1914	3	638	3.652	0.014032
TIME*MS*Lesion	17	3	6	0.033	0.991961
TIME*Running*Lesion	169	3	56	0.323	0.808686
TIME*MS*Running*Lesion	62	3	21	0.119	0.949022
Error	26203	150	175		

A5.1.1.9. Weights: Post hoc Newman Keuls

Cell No.	MS	Running	Lesion	TIME	{1} 63.687	{2} 94.888	{3} 152.33	{4} 237.60	{5} 61.357	{6} 97.757
	Newman-Keuls test; variable DV_1 (Weights) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 394.78, df = 103.50									
1	0	0	0	P28		0.00028	0.00002	0.00001	0.97379	0.07158
2	0	0	0	P35	0.00028		0.00002	0.00002	0.06075	0.99887
3	0	0	0	P49	0.00002	0.00002		0.00001	0.00014	0.00010
4	0	0	0	P63	0.00001	0.00002	0.00001		0.00017	0.00017
5	0	0	1	P28	0.97379	0.06075	0.00014	0.00017		0.00004
6	0	0	1	P35	0.07158	0.99887	0.00010	0.00017	0.00004	
7	0	0	1	P49	0.00013	0.00012	0.97838	0.00011	0.00003	0.00000
8	0	0	1	P63	0.00017	0.00014	0.00015	0.80995	0.00001	0.00001
9	0	1	0	P28	0.88050	0.06122	0.00013	0.00017	0.94518	0.05400
10	0	1	0	P35	0.06247	0.99155	0.00013	0.00016	0.05810	0.99972
11	0	1	0	P49	0.00016	0.00011	0.90717	0.00013	0.00016	0.00011
12	0	1	0	P63	0.00017	0.00016	0.00017	0.17725	0.00017	0.00013
13	0	1	1	P28	0.99173	0.06798	0.00017	0.00016	0.99584	0.09442
14	0	1	1	P35	0.06947	0.99581	0.00014	0.00011	0.05002	0.96671
15	0	1	1	P49	0.00016	0.00015	0.92545	0.00012	0.00016	0.00012
16	0	1	1	P63	0.00017	0.00016	0.00013	0.22644	0.00018	0.00013
17	1	0	0	P28	0.98741	0.06699	0.00011	0.00016	0.99592	0.07942
18	1	0	0	P35	0.02534	0.98398	0.00011	0.00015	0.01632	0.68416
19	1	0	0	P49	0.00016	0.00013	0.25862	0.00010	0.00017	0.00015
20	1	0	0	P63	0.00019	0.00016	0.00014	0.06733	0.00013	0.00016
21	1	0	1	P28	0.99206	0.05989	0.00016	0.00017	0.94927	0.04689
22	1	0	1	P35	0.06420	0.97843	0.00012	0.00013	0.04755	0.99726
23	1	0	1	P49	0.00016	0.00013	0.50148	0.00010	0.00016	0.00013
24	1	0	1	P63	0.00018	0.00016	0.00013	0.21606	0.00019	0.00014
25	1	1	0	P28	0.89010	0.08440	0.00013	0.00016	0.98419	0.08949
26	1	1	0	P35	0.06234	0.98494	0.00012	0.00014	0.05349	0.99974
27	1	1	0	P49	0.00016	0.00017	0.85776	0.00011	0.00016	0.00012
28	1	1	0	P63	0.00017	0.00016	0.00011	0.25853	0.00018	0.00013
29	1	1	1	P28	0.99670	0.05272	0.00015	0.00016	0.99749	0.09155
30	1	1	1	P35	0.06660	0.90552	0.00012	0.00013	0.05143	0.99882
31	1	1	1	P49	0.00014	0.00013	0.82290	0.00012	0.00016	0.00011
32	1	1	1	P63	0.00018	0.00016	0.00013	0.24653	0.00014	0.00016

Newman-Keuls test; variable DV_1 (Weights)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 394.78, df = 103.50

Cell No.	MS	Running	Lesion	TIME	{7} 152.61	{8} 240.16	{9} 62.089	{10} 93.567	{11} 163.23	{12} 256.60
1	0	0	0	P28	0.00013	0.00017	0.88050	0.06247	0.00016	0.00017
2	0	0	0	P35	0.00012	0.00014	0.06122	0.99155	0.00011	0.00016
3	0	0	0	P49	0.97838	0.00015	0.00013	0.00013	0.90717	0.00017
4	0	0	0	P63	0.00011	0.80995	0.00017	0.00016	0.00013	0.17725
5	0	0	1	P28	0.00003	0.00001	0.94518	0.05810	0.00016	0.00017
6	0	0	1	P35	0.00000	0.00001	0.05400	0.99972	0.00011	0.00013
7	0	0	1	P49		0.00001	0.00014	0.00016	0.85407	0.00015
8	0	0	1	P63	0.00001		0.00017	0.00016	0.00011	0.12401
9	0	1	0	P28	0.00014	0.00017		0.00018	0.00004	0.00001
10	0	1	0	P35	0.00016	0.00016	0.00018		0.00002	0.00003
11	0	1	0	P49	0.85407	0.00011	0.00004	0.00002		0.00002
12	0	1	0	P63	0.00015	0.12401	0.00001	0.00003	0.00002	
13	0	1	1	P28	0.00011	0.00016	0.99228	0.03423	0.00014	0.00016
14	0	1	1	P35	0.00012	0.00013	0.05315	0.99930	0.00013	0.00013
15	0	1	1	P49	0.82426	0.00012	0.00016	0.00011	0.91214	0.00011
16	0	1	1	P63	0.00011	0.25071	0.00018	0.00016	0.00011	0.94809
17	1	0	0	P28	0.00013	0.00016	0.99036	0.04351	0.00016	0.00016
18	1	0	0	P35	0.00012	0.00017	0.01801	0.99263	0.00012	0.00011
19	1	0	0	P49	0.22638	0.00010	0.00016	0.00014	0.36658	0.00013
20	1	0	0	P63	0.00013	0.09848	0.00014	0.00017	0.00017	0.84064
21	1	0	1	P28	0.00016	0.00017	0.99039	0.05988	0.00016	0.00018
22	1	0	1	P35	0.00013	0.00013	0.04986	0.99764	0.00015	0.00013
23	1	0	1	P49	0.44032	0.00013	0.00016	0.00013	0.39971	0.00011
24	1	0	1	P63	0.00013	0.25993	0.00018	0.00016	0.00013	0.96400
25	1	1	0	P28	0.00013	0.00016	0.95497	0.06397	0.00016	0.00017
26	1	1	0	P35	0.00014	0.00016	0.05266	0.91622	0.00013	0.00016
27	1	1	0	P49	0.76891	0.00012	0.00016	0.00013	0.97186	0.00012
28	1	1	0	P63	0.00017	0.24872	0.00017	0.00016	0.00012	0.95827
29	1	1	1	P28	0.00017	0.00016	0.99601	0.01539	0.00013	0.00016
30	1	1	1	P35	0.00013	0.00013	0.05299	0.99494	0.00017	0.00014
31	1	1	1	P49	0.57123	0.00011	0.00016	0.00017	0.97262	0.00013
32	1	1	1	P63	0.00013	0.30869	0.00019	0.00017	0.00015	0.98484

Newman-Keuls test; variable DV_1 (Weights)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 394.78, df = 103.50

Cell No.	MS	Running	Lesion	TIME	{13} 66.737	{14} 97.312	{15} 158.90	{16} 259.90	{17} 65.300	{18} 102.08
1	0	0	0	P28	0.99173	0.06947	0.00016	0.00017	0.98741	0.02534
2	0	0	0	P35	0.06798	0.99581	0.00015	0.00016	0.06699	0.98398
3	0	0	0	P49	0.00017	0.00014	0.92545	0.00013	0.00011	0.00011
4	0	0	0	P63	0.00016	0.00011	0.00012	0.22644	0.00016	0.00015
5	0	0	1	P28	0.99584	0.05002	0.00016	0.00018	0.99592	0.01632
6	0	0	1	P35	0.09442	0.96671	0.00012	0.00013	0.07942	0.68416
7	0	0	1	P49	0.00011	0.00012	0.82426	0.00011	0.00013	0.00012
8	0	0	1	P63	0.00016	0.00013	0.00012	0.25071	0.00016	0.00017
9	0	1	0	P28	0.99228	0.05315	0.00016	0.00018	0.99036	0.01801
10	0	1	0	P35	0.03423	0.99930	0.00011	0.00016	0.04351	0.99263
11	0	1	0	P49	0.00014	0.00013	0.91214	0.00011	0.00016	0.00012
12	0	1	0	P63	0.00016	0.00013	0.00011	0.94809	0.00016	0.00011
13	0	1	1	P28		0.00040	0.00002	0.00001	0.89249	0.03769
14	0	1	1	P35	0.00040		0.00002	0.00002	0.07446	0.89454
15	0	1	1	P49	0.00002	0.00002		0.00001	0.00013	0.00011
16	0	1	1	P63	0.00001	0.00002	0.00001		0.00017	0.00013
17	1	0	0	P28	0.89249	0.07446	0.00013	0.00017		0.00002
18	1	0	0	P35	0.03769	0.89454	0.00011	0.00013	0.00002	
19	1	0	0	P49	0.00016	0.00017	0.39826	0.00012	0.00003	0.00001
20	1	0	0	P63	0.00017	0.00016	0.00013	0.81582	0.00002	0.00003
21	1	0	1	P28	0.99751	0.04718	0.00016	0.00019	0.99800	0.01488
22	1	0	1	P35	0.07445	0.97663	0.00012	0.00016	0.06597	0.96353
23	1	0	1	P49	0.00016	0.00015	0.59377	0.00012	0.00016	0.00011
24	1	0	1	P63	0.00017	0.00016	0.00017	0.86854	0.00017	0.00013
25	1	1	0	P28	0.98791	0.08548	0.00014	0.00017	0.98937	0.03348
26	1	1	0	P35	0.04698	0.99920	0.00017	0.00016	0.05064	0.99251
27	1	1	0	P49	0.00013	0.00011	0.70981	0.00013	0.00014	0.00012
28	1	1	0	P63	0.00016	0.00013	0.00013	0.79644	0.00017	0.00013
29	1	1	1	P28	0.94850	0.08136	0.00013	0.00016	0.97817	0.03772
30	1	1	1	P35	0.06984	0.99346	0.00013	0.00016	0.06463	0.98054
31	1	1	1	P49	0.00013	0.00012	0.98038	0.00017	0.00013	0.00014
32	1	1	1	P63	0.00017	0.00016	0.00011	0.97555	0.00017	0.00014

Newman-Keuls test; variable DV_1 (Weights)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 394.78, df = 103.50

Cell No.	MS	Running	Lesion	TIME	{19} 177.63	{20} 269.22	{21} 60.680	{22} 97.000	{23} 172.20	{24} 261.66
1	0	0	0	P28	0.00016	0.00019	0.99206	0.06420	0.00016	0.00018
2	0	0	0	P35	0.00013	0.00016	0.05989	0.97843	0.00013	0.00016
3	0	0	0	P49	0.25862	0.00014	0.00016	0.00012	0.50148	0.00013
4	0	0	0	P63	0.00010	0.06733	0.00017	0.00013	0.00010	0.21606
5	0	0	1	P28	0.00017	0.00013	0.94927	0.04755	0.00016	0.00019
6	0	0	1	P35	0.00015	0.00016	0.04689	0.99726	0.00013	0.00014
7	0	0	1	P49	0.22638	0.00013	0.00016	0.00013	0.44032	0.00013
8	0	0	1	P63	0.00010	0.09848	0.00017	0.00013	0.00013	0.25993
9	0	1	0	P28	0.00016	0.00014	0.99039	0.04986	0.00016	0.00018
10	0	1	0	P35	0.00014	0.00017	0.05988	0.99764	0.00013	0.00016
11	0	1	0	P49	0.36658	0.00017	0.00016	0.00015	0.39971	0.00013
12	0	1	0	P63	0.00013	0.84064	0.00018	0.00013	0.00011	0.96400
13	0	1	1	P28	0.00016	0.00017	0.99751	0.07445	0.00016	0.00017
14	0	1	1	P35	0.00017	0.00016	0.04718	0.97663	0.00015	0.00016
15	0	1	1	P49	0.39826	0.00013	0.00016	0.00012	0.59377	0.00017
16	0	1	1	P63	0.00012	0.81582	0.00019	0.00016	0.00012	0.86854
17	1	0	0	P28	0.00003	0.00002	0.99800	0.06597	0.00016	0.00017
18	1	0	0	P35	0.00001	0.00003	0.01488	0.96353	0.00011	0.00013
19	1	0	0	P49		0.00001	0.00017	0.00011	0.60945	0.00012
20	1	0	0	P63	0.00001		0.00014	0.00016	0.00015	0.75651
21	1	0	1	P28	0.00017	0.00014		0.00003	0.00001	0.00002
22	1	0	1	P35	0.00011	0.00016	0.00003		0.00001	0.00003
23	1	0	1	P49	0.60945	0.00015	0.00001	0.00001		0.00003
24	1	0	1	P63	0.00012	0.75651	0.00002	0.00003	0.00003	
25	1	1	0	P28	0.00016	0.00018	0.99332	0.07760	0.00016	0.00017
26	1	1	0	P35	0.00013	0.00017	0.05376	0.99637	0.00013	0.00016
27	1	1	0	P49	0.50605	0.00011	0.00016	0.00013	0.65329	0.00015
28	1	1	0	P63	0.00011	0.78623	0.00018	0.00014	0.00012	0.90548
29	1	1	1	P28	0.00016	0.00017	0.99832	0.06719	0.00014	0.00017
30	1	1	1	P35	0.00013	0.00016	0.04979	0.93633	0.00011	0.00016
31	1	1	1	P49	0.47545	0.00013	0.00016	0.00012	0.70441	0.00011
32	1	1	1	P63	0.00011	0.50660	0.00013	0.00016	0.00013	0.96332

Cell No.	MS	Running	Lesion	TIME	{25} 65.157	{26} 94.686	{27} 162.86	{28} 257.16	{29} 67.425	{30} 96.150
Newman-Keuls test; variable DV_1 (Weights) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 394.78, df = 103.50										
1	0	0	0	P28	0.89010	0.06234	0.00016	0.00017	0.99670	0.06660
2	0	0	0	P35	0.08440	0.98494	0.00017	0.00016	0.05272	0.90552
3	0	0	0	P49	0.00013	0.00012	0.85776	0.00011	0.00015	0.00012
4	0	0	0	P63	0.00016	0.00014	0.00011	0.25853	0.00016	0.00013
5	0	0	1	P28	0.98419	0.05349	0.00016	0.00018	0.99749	0.05143
6	0	0	1	P35	0.08949	0.99974	0.00012	0.00013	0.09155	0.99882
7	0	0	1	P49	0.00013	0.00014	0.76891	0.00017	0.00017	0.00013
8	0	0	1	P63	0.00016	0.00016	0.00012	0.24872	0.00016	0.00013
9	0	1	0	P28	0.95497	0.05266	0.00016	0.00017	0.99601	0.05299
10	0	1	0	P35	0.06397	0.91622	0.00013	0.00016	0.01539	0.99494
11	0	1	0	P49	0.00016	0.00013	0.97186	0.00012	0.00013	0.00017
12	0	1	0	P63	0.00017	0.00016	0.00012	0.95827	0.00016	0.00014
13	0	1	1	P28	0.98791	0.04698	0.00013	0.00016	0.94850	0.06984
14	0	1	1	P35	0.08548	0.99920	0.00011	0.00013	0.08136	0.99346
15	0	1	1	P49	0.00014	0.00017	0.70981	0.00013	0.00013	0.00013
16	0	1	1	P63	0.00017	0.00016	0.00013	0.79644	0.00016	0.00016
17	1	0	0	P28	0.98937	0.05064	0.00014	0.00017	0.97817	0.06463
18	1	0	0	P35	0.03348	0.99251	0.00012	0.00013	0.03772	0.98054
19	1	0	0	P49	0.00016	0.00013	0.50605	0.00011	0.00016	0.00013
20	1	0	0	P63	0.00018	0.00017	0.00011	0.78623	0.00017	0.00016
21	1	0	1	P28	0.99332	0.05376	0.00016	0.00018	0.99832	0.04979
22	1	0	1	P35	0.07760	0.99637	0.00013	0.00014	0.06719	0.93633
23	1	0	1	P49	0.00016	0.00013	0.65329	0.00012	0.00014	0.00011
24	1	0	1	P63	0.00017	0.00016	0.00015	0.90548	0.00017	0.00016
25	1	1	0	P28		0.00041	0.00003	0.00001	0.99659	0.07833
26	1	1	0	P35	0.00041		0.00001	0.00003	0.03084	0.98962
27	1	1	0	P49	0.00003	0.00001		0.00003	0.00013	0.00015
28	1	1	0	P63	0.00001	0.00003	0.00003		0.00016	0.00016
29	1	1	1	P28	0.99659	0.03084	0.00013	0.00016		0.00045
30	1	1	1	P35	0.07833	0.98962	0.00015	0.00016	0.00045	
31	1	1	1	P49	0.00013	0.00015	0.91649	0.00015	0.00001	0.00003
32	1	1	1	P63	0.00018	0.00016	0.00017	0.96533	0.00001	0.00004

Newman-Keuls test; variable DV_1 (Weights)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 394.78, df = 103.

Cell No.	MS	Running	Lesion	TIME	{31} 158.64	{32} 262.15
1	0	0	0	P28	0.00014	0.00018
2	0	0	0	P35	0.00013	0.00016
3	0	0	0	P49	0.82290	0.00013
4	0	0	0	P63	0.00012	0.24653
5	0	0	1	P28	0.00016	0.00014
6	0	0	1	P35	0.00011	0.00016
7	0	0	1	P49	0.57123	0.00013
8	0	0	1	P63	0.00011	0.30869
9	0	1	0	P28	0.00016	0.00019
10	0	1	0	P35	0.00017	0.00017
11	0	1	0	P49	0.97262	0.00015
12	0	1	0	P63	0.00013	0.98484
13	0	1	1	P28	0.00013	0.00017
14	0	1	1	P35	0.00012	0.00016
15	0	1	1	P49	0.98038	0.00011
16	0	1	1	P63	0.00017	0.97555
17	1	0	0	P28	0.00013	0.00017
18	1	0	0	P35	0.00014	0.00014
19	1	0	0	P49	0.47545	0.00011
20	1	0	0	P63	0.00013	0.50660
21	1	0	1	P28	0.00016	0.00013
22	1	0	1	P35	0.00012	0.00016
23	1	0	1	P49	0.70441	0.00013
24	1	0	1	P63	0.00011	0.96332
25	1	1	0	P28	0.00013	0.00018
26	1	1	0	P35	0.00015	0.00016
27	1	1	0	P49	0.91649	0.00017
28	1	1	0	P63	0.00015	0.96533
29	1	1	1	P28	0.00001	0.00001
30	1	1	1	P35	0.00003	0.00004
31	1	1	1	P49		0.00002
32	1	1	1	P63	0.00002	

APPENDIX A5.1.2 RUNNING WHEELS

A5.1.2.1. Study 1 Running Data Spreadsheet

	1 MS	2 Lesion	3 P28	4 P29	5 P30	6 P31	7 P32	8 P33	9 P34
129	1	1	14	1410	1094	4362	7135	1036	3501
164	1	0	1523	1766	1893	1474	1162	2067	1572
207	0	1	1262	1788	2385	2000	655	1427	1715
174	0	0	33	0	331	982	1373	1095	922
122	1	0	923	1565	1601	1443	1661	1393	1914
195	1	1	192	1628	1247	948	936	1110	1135
203	0	1	1930	1302	1600	2051	1495	1504	2075
222	0	0	825	1940	1232	921	987	829	914
182	1	1	137	538	931	1156	1750	1196	1581
216	1	0	15	240	378	221	334	335	230
188	0	1	5	6	0	12	70	772	920
220	1	1	2467	1438	1814	1667	1833	1052	1076
138	1	0	2989	1060	786	1262	1454	2046	1442
191	0	1	6	0	1383	1931	3047	2190	1784
131	0	0	2375	1133	945	1554	1563	1550	1620
196	1	0	1124	1348	1246	1085	1025	1316	1218
145	1	1	1357	1541	1359	1425	1167	1377	1233
198	1	1	15	654	863	837	1301	1304	1547
210	0	1	15	35	513	620	691	693	674
232	0	0	1214	960	1002	1326	3121	1347	1449
137	0	1	1	2	127	84	476	1087	1208
271	1	0	307	1085	686	1281	1046	1292	794
301	0	1	576	641	1170	1170	1265	5331	749
305	0	0	743	998	1700	1643	1605	1530	1185
306	1	1	152	461	711	3	0	84	629
312	0	1	25	430	558	760	797	473	576
314	0	0	2520	2150	1536	1723	1221	986	719
313	0	0	460	955	330	324	205	442	442
317	1	1	0	532	1050	523	804	742	854
318	1	0	563	805	991	1025	570	701	325
320	1	1	1876	1574	2010	760	1283	1081	1324
319	1	0	915	738	948	711	1069	1101	924
323	0	0	418	745	643	542	772	508	525
324	0	0	88	0	1087	444	683	678	735

	1 MS	2 Lesion	3 P28	4 P35	5 P36	6 P37	7 P38	8 P39	9 P40
129	1	1	14	125	271	553	658	806	738
164	1	0	1523	710	1331	1438	1752	1468	1675
207	0	1	1262	322	529	1597	1459	1480	1364
174	0	0	33	78	531	657	537	547	557
122	1	0	923	312	731	1022	1853	1913	2373
195	1	1	192	636	646	928	1165	774	933
203	0	1	1930	525	639	735	2198	910	4160
222	0	0	825	219	987	1161	1048	1315	1317
182	1	1	137	1277	1507	2857	3434	2252	2629
216	1	0	15	29	213	261	229	193	201
188	0	1	5	12	612	302	767	739	405
220	1	1	2467	425	936	732	1720	884	1779
138	1	0	2989	501	1028	1214	1005	761	589
191	0	1	6	169	610	491	1169	995	976
131	0	0	2375	512	1398	1236	1487	716	4414
196	1	0	1124	415	1481	865	1090	644	1082
145	1	1	1357	508	1212	1485	1602	928	1902
198	1	1	15	21	438	557	598	394	732
210	0	1	15	23	190	254	399	322	417
232	0	0	1214	407	778	724	671	792	1034
137	0	1	1	338	553	1463	1028	1496	1100
271	1	0	307	364	1238	533	860	1718	1150
301	0	1	576	670	435	476	454	660	1182
305	0	0	743	563	980	869	931	994	1231
306	1	1	152	607	3825	340	576	726	1487
312	0	1	25	35	395	587	467	471	725
314	0	0	2520	596	1008	886	506	1002	1218
313	0	0	460	110	326	410	281	358	421
317	1	1	0	60	320	510	793	649	558
318	1	0	563	212	439	330	430	382	516
320	1	1	1876	122	551	310	500	668	778
319	1	0	915	485	1012	1857	2580	1659	783
323	0	0	418	145	543	605	503	366	502
324	0	0	88	181	633	633	775	681	655

	1 MS	2 Lesion	3 P41	4 P42	5 P43	6 P44	7 P45	8 P46
129	1	1	1026	1256	866	943	1168	1204
164	1	0	1921	1189	1259	2099	2438	1216
207	0	1	2139	3491	870	1249	1653	2018
174	0	0	843	606	946	549	686	735
122	1	0	1826	1892	2530	3472	3681	1604
195	1	1	779	1122	880	1246	963	622
203	0	1	2029	1451	733	817C	2743	1977
222	0	0	1519	2356	1078	1972	1309	3046
182	1	1	2154	2747	532C	376C	2738	2971
216	1	0	21C	176	284	168	213	212
188	0	1	48C	709	80C	932	628	1113
220	1	1	1171	1337	1185	1668	1047	1262
138	1	0	926	519	917	1013	799	1305
191	0	1	1041	1117	1117	1155	1123	1302
131	0	0	4414	1351	1848	1594	2831	2461
196	1	0	1502	2166	4692	4119	7087	1379
145	1	1	4278	132C	1423	1025	1398	191C
198	1	1	855	933	688	629	846	71C
210	0	1	509	431	481	415	462	564
232	0	0	765	951	1223	132C	976	1875
137	0	1	98C	911	80C	1261	1261	101C
271	1	0	705	162C	953	378	378	134
301	0	1	774	64C	639	651	632	1349
305	0	0	1018	1102	993	1154	119C	3327
306	1	1	951	942	964	961	2857	665
312	0	1	184	686	607	839	768	1616
314	0	0	250C	784	1705	2096	745	995
313	0	0	502	552	404	484	592	552
317	1	1	774	1169	623	922	1216	91C
318	1	0	888	277	49C	381	318	372
320	1	1	542	702	617	709	797	758
319	1	0	3057	2187	3286	3046	4834	114C
323	0	0	704	315	414	416	694	441
324	0	0	551	539	562	405	87C	629

	1 MS	2 Lesion	3 P47	4 P48	5 Total
129	1	1	859	1276	**30301**
164	1	0	1408	1492	**32853**
207	0	1	873	2330	**32606**
174	0	0	905	1097	**14010**
122	1	0	2560	3703	**39972**
195	1	1	1136	951	**19977**
203	0	1	1186	3191	**42604**
222	0	0	1054	2239	**28268**
182	1	1	3252	2899	**47086**
216	1	0	257	253	**4652**
188	0	1	723	854	**10861**
220	1	1	1830	1013	**28336**
138	1	0	786	789	**23191**
191	0	1	1352	1147	**24105**
131	0	0	1035	1609	**37646**
196	1	0	2152	1790	**38826**
145	1	1	3272	1168	**32890**
198	1	1	620	690	**15232**
210	0	1	459	497	**8664**
232	0	0	1288	1027	**24250**
137	0	1	1191	896	**17273**
271	1	0	735	534	**17791**
301	0	1	1702	1884	**23050**
305	0	0	990	1007	**25753**
306	1	1	677	2289	**19907**
312	0	1	1432	548	**12979**
314	0	0	887	953	**26736**
313	0	0	698	670	**9518**
317	1	1	764	716	**14489**
318	1	0	294	277	**10586**
320	1	1	653	618	**18233**
319	1	0	2107	2150	**36589**
323	0	0	421	715	**10937**
324	0	0	638	587	**12054**

A5.1.2.2. Study 1 Running data descriptive statistics

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P28 Mean	P28 Std.Dev.	P28 Std.Err	P28 -95.00%	P28 +95.00%
Total			34	796.02	876.322	150.288	490.26	1101.79
MS	0		17	735.05	849.911	206.133	298.07	1172.04
MS	1		17	857.00	923.920	224.083	381.96	1332.03
Lesion	0		17	1002.05	888.826	215.572	545.06	1459.05
Lesion	1		17	590.00	838.846	203.450	158.70	1021.29
MS*Lesion	0	0	9	964.00	917.127	305.709	259.03	1668.96
MS*Lesion	0	1	8	477.50	739.322	261.389	-140.58	1095.58
MS*Lesion	1	0	8	1044.87	916.788	324.133	278.42	1811.33
MS*Lesion	1	1	9	690.00	951.391	317.130	-41.30	1421.30

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P29 Mean	P29 Std.Dev.	P29 Std.Err	P29 -95.00%	P29 +95.00%
Total			34	925.52	630.691	108.162	705.470	1145.58
MS	0		17	769.70	727.669	176.485	395.573	1143.83
MS	1		17	1081.35	489.186	118.645	829.836	1332.87
Lesion	0		17	1028.70	612.403	148.529	713.836	1343.57
Lesion	1		17	822.35	650.187	157.693	488.057	1156.64
MS*Lesion	0	0	9	986.77	732.365	244.121	423.832	1549.72
MS*Lesion	0	1	8	525.50	684.521	242.015	-46.774	1097.77
MS*Lesion	1	0	8	1075.87	489.332	173.005	666.782	1484.96
MS*Lesion	1	1	9	1086.22	518.686	172.895	687.524	1484.92

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P30 Mean	P30 Std.Dev.	P30 Std.Err	P30 -95.00%	P30 +95.00%
Total			34	1063.23	553.839	94.982	869.991	1256.47
MS	0		17	973.05	637.464	154.607	645.305	1300.81
MS	1		17	1153.41	457.172	110.880	918.355	1388.46
Lesion	0		17	1019.70	475.148	115.240	775.407	1264.00
Lesion	1		17	1106.76	634.708	153.939	780.427	1433.10
MS*Lesion	0	0	9	978.44	482.370	160.790	607.662	1349.22
MS*Lesion	0	1	8	967.00	814.139	287.841	286.362	1647.63
MS*Lesion	1	0	8	1066.12	495.443	175.165	651.924	1480.32
MS*Lesion	1	1	9	1231.00	434.557	144.852	896.969	1565.03

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P31 Mean	P31 Std.Dev.	P31 Std.Err	P31 -95.00%	P31 +95.00%
Total			34	1125.58	804.17	137.915	844.998	1406.17
MS	0		17	1063.94	674.52	163.596	717.131	1410.75
MS	1		17	1187.23	933.142	226.320	707.457	1667.01
Lesion	0		17	1056.52	470.653	114.150	814.542	1298.51
Lesion	1		17	1194.64	1049.84	254.624	654.868	1734.42
MS*Lesion	0	0	9	1051.00	537.169	179.056	638.095	1463.90
MS*Lesion	0	1	8	1078.50	842.459	297.854	374.186	1782.81
MS*Lesion	1	0	8	1062.75	420.075	148.519	711.558	1413.94
MS*Lesion	1	1	9	1297.88	1248.13	416.043	338.489	2257.28

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P32 Mean	P32 Std.Dev.	P32 Std.Err	P32 -95.00%	P32 +95.00%
Total			34	1310.47	1233.60	211.561	880.046	1740.89
MS	0		17	1178.00	848.39	205.765	741.797	1614.20
MS	1		17	1442.94	1543.24	374.291	649.478	2236.40
Lesion	0		17	1167.70	660.55	160.208	828.078	1507.33
Lesion	1		17	1453.23	1630.64	395.490	614.833	2291.63
MS*Lesion	0	0	9	1281.11	824.85	274.951	647.072	1915.14
MS*Lesion	0	1	8	1062.00	915.72	323.758	296.432	1827.56
MS*Lesion	1	0	8	1040.12	429.67	151.913	680.905	1399.34
MS*Lesion	1	1	9	1801.00	2072.47	690.825	207.953	3394.04

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P33 Mean	P33 Std.Dev.	P33 Std.Err	P33 -95.00%	P33 +95.00%
Total			34	1225.73	870.80	149.340	921.898	1529.57
MS	0		17	1320.11	1137.39	275.859	735.320	1904.91
MS	1		17	1131.35	501.36	121.599	873.572	1389.13
Lesion	0		17	1130.35	513.84	124.624	866.160	1394.54
Lesion	1		17	1321.11	1131.64	274.463	739.281	1902.95
MS*Lesion	0	0	9	996.11	418.21	139.405	674.640	1317.58
MS*Lesion	0	1	8	1684.62	1571.70	555.682	370.644	2998.60
MS*Lesion	1	0	8	1281.37	595.29	210.468	783.696	1779.05
MS*Lesion	1	1	9	998.00	387.49	129.164	700.146	1295.85

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P34 Mean	P34 Std.Dev.	P34 Std.Err	P34 -95.00%	P34 +95.00%
Total			34	1162.08	623.845	106.988	944.418	1379.75
MS	0		17	1071.29	494.576	119.952	817.006	1325.58
MS	1		17	1252.88	735.232	178.320	874.860	1630.90
Lesion	0		17	995.882	488.735	118.535	744.597	1247.16
Lesion	1		17	1328.29	710.721	172.375	962.874	1693.71
MS*Lesion	0	0	9	945.667	402.074	134.024	636.604	1254.72
MS*Lesion	0	1	8	1212.62	575.518	203.476	731.479	1693.77
MS*Lesion	1	0	8	1052.37	595.250	210.452	554.733	1550.01
MS*Lesion	1	1	9	1431.11	833.762	277.920	790.224	2071.99

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P35 Mean	P35 Std.Dev.	P35 Std.Err	P35 -95.00%	P35 +95.00%
Total			34	344.529	273.700	46.939	249.030	440.028
MS	0		17	288.529	220.451	53.467	175.183	401.875
MS	1		17	400.529	315.028	76.405	238.556	562.502
Lesion	0		17	343.470	201.953	48.980	239.635	447.305
Lesion	1		17	345.588	337.221	81.788	172.204	518.971
MS*Lesion	0	0	9	312.333	206.742	68.914	153.416	471.249
MS*Lesion	0	1	8	261.750	246.346	87.096	55.798	467.701
MS*Lesion	1	0	8	378.500	204.268	72.219	207.727	549.272
MS*Lesion	1	1	9	420.111	401.321	133.773	111.627	728.594

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P36 Mean	P36 Std.Dev.	P36 Std.Err	P36 -95.00%	P36 +95.00%
Total			34	833.11	646.75	110.916	607.455	1058.77
MS	0		17	655.70	296.53	71.919	503.242	808.16
MS	1		17	1010.52	841.36	204.061	577.938	1443.12
Lesion	0		17	862.17	379.81	92.118	666.894	1057.45
Lesion	1		17	804.05	846.55	205.320	368.798	1239.31
MS*Lesion	0	0	9	798.22	327.80	109.269	546.246	1050.19
MS*Lesion	0	1	8	495.37	150.61	53.250	369.457	621.29
MS*Lesion	1	0	8	934.12	442.43	156.423	564.241	1304.00
MS*Lesion	1	1	9	1078.44	1110.62	370.208	224.741	1932.14

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P37 Mean	P37 Std.Dev.	P37 Std.Err	P37 -95.00%	P37 +95.00%
Total			34	849.352	552.520	94.756	656.569	1042.13
MS	0		17	769.764	389.889	94.562	569.302	970.22
MS	1		17	928.941	681.295	165.238	578.651	1279.23
Lesion	0		17	864.764	421.115	102.135	648.247	1081.28
Lesion	1		17	833.941	672.156	163.021	488.350	1179.53
MS*Lesion	0	0	9	797.888	268.508	89.502	591.495	1004.28
MS*Lesion	0	1	8	738.125	512.740	181.281	309.463	1166.78
MS*Lesion	1	0	8	940.000	557.431	197.081	473.975	1406.02
MS*Lesion	1	1	9	919.111	810.065	270.021	296.439	1541.78

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P38 Mean	P38 Std.Dev.	P38 Std.Err	P38 -95.00%	P38 +95.00%
Total			34	1044.85	708.180	121.452	797.757	1291.94
MS	0		17	863.529	498.860	120.991	607.039	1120.02
MS	1		17	1226.17	845.965	205.176	791.221	1661.13
Lesion	0		17	972.824	629.955	152.786	648.930	1296.71
Lesion	1		17	1116.88	791.527	191.973	709.916	1523.84
MS*Lesion	0	0	9	748.778	363.569	121.189	469.313	1028.24
MS*Lesion	0	1	8	992.625	617.886	218.456	476.058	1509.19
MS*Lesion	1	0	8	1224.87	786.677	278.132	567.196	1882.55
MS*Lesion	1	1	9	1227.33	943.295	314.431	502.252	1952.41

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P39 Mean	P39 Std.Dev.	P39 Std.Err	P39 -95.00%	P39 +95.00%
Total			34	901.853	492.198	84.411	730.116	1073.58
MS	0		17	814.353	367.947	89.240	625.172	1003.53
MS	1		17	989.353	589.920	143.076	686.044	1292.66
Lesion	0		17	912.294	526.363	127.661	641.663	1182.92
Lesion	1		17	891.412	471.561	114.370	648.957	1133.86
MS*Lesion	0	0	9	752.333	314.687	104.895	510.443	994.224
MS*Lesion	0	1	8	884.125	431.007	152.384	523.793	1244.45
MS*Lesion	1	0	8	1092.25	670.963	237.221	531.310	1653.19
MS*Lesion	1	1	9	897.889	531.125	177.041	489.629	1306.14

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P40 Mean	P40 Std.Dev.	P40 Std.Err	P40 -95.00%	P40 +95.00%
Total			34	1223.02	955.93	163.942	889.486	1556.57
MS	0		17	1275.17	1183.22	286.975	666.816	1883.53
MS	1		17	1170.88	692.05	167.848	815.059	1526.70
Lesion	0		17	1159.88	993.11	240.866	649.268	1670.49
Lesion	1		17	1286.17	943.39	228.807	801.126	1771.22
MS*Lesion	0	0	9	1261.00	1232.03	410.679	313.971	2208.02
MS*Lesion	0	1	8	1291.12	1210.27	427.895	279.312	2302.93
MS*Lesion	1	0	8	1046.12	701.18	247.906	459.919	1632.33
MS*Lesion	1	1	9	1281.77	705.89	235.297	739.180	1824.37

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P41 Mean	P41 Std.Dev.	P41 Std.Err	P41 -95.00%	P41 +95.00%
Total			34	1309.32	1019.63	174.865	953.556	1665.09
MS	0		17	1232.47	1044.63	253.360	695.370	1769.57
MS	1		17	1386.17	1020.04	247.395	861.720	1910.63
Lesion	0		17	1403.00	1083.22	262.721	846.055	1959.94
Lesion	1		17	1215.64	975.83	236.675	713.918	1717.37
MS*Lesion	0	0	9	1424.00	1283.26	427.755	437.593	2410.40
MS*Lesion	0	1	8	1017.00	715.57	252.994	418.763	1615.23
MS*Lesion	1	0	8	1379.37	893.74	315.988	632.182	2126.56
MS*Lesion	1	1	9	1392.22	1175.55	391.852	488.608	2295.83

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P42 Mean	P42 Std.Dev.	P42 Std.Err	P42 -95.00%	P42 +95.00%
Total			34	1163.11	740.846	127.054	904.624	1421.61
MS	0		17	1058.35	793.250	192.391	650.501	1466.20
MS	1		17	1267.88	692.416	167.935	911.874	1623.89
Lesion	0		17	1093.05	721.510	174.992	722.092	1464.02
Lesion	1		17	1233.17	775.243	188.024	834.583	1631.77
MS*Lesion	0	0	9	950.66	616.155	205.385	477.047	1424.28
MS*Lesion	0	1	8	1179.50	986.260	348.695	354.965	2004.03
MS*Lesion	1	0	8	1253.25	837.026	295.933	553.478	1953.02
MS*Lesion	1	1	9	1280.88	587.742	195.914	829.110	1732.66

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P43 Mean	P43 Std.Dev.	P43 Std.Err	P43 -95.00%	P43 +95.00%
Total			34	1241.08	1131.73	194.090	846.208	1635.96
MS	0		17	895.29	411.93	99.908	683.498	1107.09
MS	1		17	1586.88	1489.26	361.199	821.173	2352.59
Lesion	0		17	1387.29	1163.55	282.204	789.047	1985.54
Lesion	1		17	1094.88	1114.62	270.337	521.793	1667.97
MS*Lesion	0	0	9	1019.22	519.86	173.286	619.622	1418.82
MS*Lesion	0	1	8	755.87	192.44	68.037	594.990	916.75
MS*Lesion	1	0	8	1801.37	1554.20	549.494	502.026	3100.72
MS*Lesion	1	1	9	1396.22	1495.09	498.364	246.991	2545.45

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P44 Mean	P44 Std.Dev.	P44 Std.Err	P44 -95.00%	P44 +95.00%
Total			34	1505.91	1539.36	263.999	968.80	2043.02
MS	0		17	1450.70	1809.59	438.890	520.29	2381.11
MS	1		17	1561.11	1267.40	307.390	909.47	2212.75
Lesion	0		17	1450.94	1199.68	290.967	834.11	2067.76
Lesion	1		17	1560.88	1855.19	449.949	607.03	2514.73
MS*Lesion	0	0	9	1110.00	678.30	226.101	588.60	1631.39
MS*Lesion	0	1	8	1834.00	2577.18	911.172	-320.58	3988.58
MS*Lesion	1	0	8	1834.50	1564.06	552.981	526.90	3142.09
MS*Lesion	1	1	9	1318.11	964.84	321.614	576.46	2059.75

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P45 Mean	P45 Std.Dev.	P45 Std.Err	P45 -95.00%	P45 +95.00%
Total			34	1527.67	1434.55	246.024	1027.13	2028.21
MS	0		17	1127.23	698.87	169.503	767.90	1486.56
MS	1		17	1928.11	1848.06	448.221	977.93	2878.30
Lesion	0		17	1743.58	1888.18	457.953	772.77	2714.40
Lesion	1		17	1311.76	761.71	184.742	920.12	1703.40
MS*Lesion	0	0	9	1099.22	692.52	230.841	566.90	1631.54
MS*Lesion	0	1	8	1158.75	752.44	266.028	529.69	1787.80
MS*Lesion	1	0	8	2468.50	2542.96	899.072	342.53	4594.46
MS*Lesion	1	1	9	1447.77	787.90	262.634	842.14	2053.41

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P46 Mean	P46 Std.Dev.	P46 Std.Err	P46 -95.00%	P46 +95.00%
Total			34	1276.00	799.25	137.071	997.12	1554.87
MS	0		17	1471.17	874.44	212.083	1021.57	1920.77
MS	1		17	1080.82	686.97	166.616	727.61	1434.03
Lesion	0		17	1260.17	952.12	230.923	770.64	1749.71
Lesion	1		17	1291.82	640.68	155.388	962.41	1621.23
MS*Lesion	0	0	9	1562.33	1138.87	379.625	686.91	2437.75
MS*Lesion	0	1	8	1368.62	492.69	174.192	956.72	1780.52
MS*Lesion	1	0	8	920.25	583.35	206.248	432.55	1407.94
MS*Lesion	1	1	9	1223.55	772.92	257.641	629.43	1817.67

	Descriptive Statistics (Running)							
Effect	Level of Factor	Level of Factor	N	P47 Mean	P47 Std.Dev.	P47 Std.Err	P47 -95.00%	P47 +95.00%
Total			34	1182.23	748.77	128.414	920.974	1443.49
MS	0		17	990.23	346.84	84.121	811.905	1168.56
MS	1		17	1374.23	978.64	237.355	871.064	1877.40
Lesion	0		17	1071.47	656.63	159.257	733.859	1409.08
Lesion	1		17	1293.00	836.14	202.794	863.095	1722.90
MS*Lesion	0	0	9	879.55	258.82	86.273	680.608	1078.50
MS*Lesion	0	1	8	1114.75	406.13	143.589	775.214	1454.28
MS*Lesion	1	0	8	1287.37	899.08	317.873	535.723	2039.02
MS*Lesion	1	1	9	1451.44	1092.66	364.222	611.545	2291.34

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	P48 Mean	P48 Std.Dev.	P48 Std.Err	P48 -95.00%	P48 +95.00%
Total			34	1289.97	849.542	145.695	993.551	1586.39
MS	0		17	1250.05	753.242	182.688	862.777	1637.34
MS	1		17	1329.88	958.015	232.352	837.316	1822.44
Lesion	0		17	1228.94	874.119	212.005	779.510	1678.37
Lesion	1		17	1351.00	846.494	205.305	915.772	1786.22
MS*Lesion	0	0	9	1100.44	523.007	174.335	698.425	1502.46
MS*Lesion	0	1	8	1418.37	960.773	339.684	615.148	2221.60
MS*Lesion	1	0	8	1373.50	1178.45	416.646	388.288	2358.71
MS*Lesion	1	1	9	1291.11	785.387	261.795	687.409	1894.81

Effect	Descriptive Statistics (Running)							
	Level of Factor	Level of Factor	N	Total Mean	Total Std.Dev.	Total Std.Err	Total -95.00%	Total +95.00%
Total			34	23300.7	11045.6	1894.31	19446.7	27154.7
MS	0		17	21253.7	10323.9	2503.92	15945.6	26561.8
MS	1		17	25347.7	11668.3	2829.99	19348.3	31347.0
Lesion	0		17	23154.8	11540.8	2799.05	17221.0	29088.5
Lesion	1		17	23446.6	10881.3	2639.11	17851.9	29041.3
MS*Lesion	0	0	9	21019.1	9733.68	3244.56	13537.1	28501.0
MS*Lesion	0	1	8	21517.7	11627.1	4110.81	11797.2	31238.2
MS*Lesion	1	0	8	25557.5	13553.3	4791.83	14226.6	36888.3
MS*Lesion	1	1	9	25161.2	10558.7	3519.57	17045.0	33277.3

A5.1.2.3. Study 1 Running: Total distance ANOVA

Effect	Univariate Tests of Significance for Total (Running) Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1.841634E+1	1	1.841634E+1	142.319	0.00000
MS	1.417613E+0	1	1.417613E+0	1.095	0.30361
Lesion	2.218828E+0	1	2.218828E+0	0.000	0.98963
MS*Lesion	1.695972E+0	1	1.695972E+0	0.013	0.90961
Error	3.882040E+0	30	1.294013E+0		

A5.1.2.4. Study 1 Running: Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Running) Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	87696845	1	87696845	142.3195	0.00000
MS	675054	1	675054	1.0955	0.30361
Lesion	1057	1	1057	0.0002	0.98963
MS*Lesion	80761	1	80761	0.0131	0.90961
Error	18485904	30	616196		
TIME	4979793	20	248989	4.6799	0.00000
TIME*MS	1196372	20	59818	1.1243	0.31896
TIME*Lesion	827301	20	41365	0.7775	0.74227
TIME*MS*Lesion	1263136	20	63156	1.1871	0.25888
Error	31922263	600	53203		

A5.1.2.5. Study 1 Running: Repeated measures post hoc Newman Keuls test

Cell No.	Newman-Keuls test; variable DV_1 (Running) Approximate Probabilities for Post Hoc Tests Error: Within MS = 5320E2, df = 600.00 TIME	{1} 796.03	{2} 925.53	{3} 1063.2	{4} 1125.6	{5} 1310.5	{6} 1225.7	{7} 1162.1	{8} 344.53
1	P28		0.94909	0.73871	0.57665	0.24780	0.42318	0.49462	0.01071
2	P29	0.94909		0.71632	0.67040	0.64730	0.74868	0.66789	0.01310
3	P30	0.73871	0.71632		0.72450	0.96430	0.96974	0.84195	0.00127
4	P31	0.57665	0.67040	0.72450		0.99403	0.99317	0.83655	0.00037
5	P32	0.24780	0.64730	0.96430	0.99403		0.99689	0.99797	0.00004
6	P33	0.42318	0.74868	0.96974	0.99317	0.99689		0.99642	0.00007
7	P34	0.49462	0.66789	0.84195	0.83655	0.99797	0.99642		0.00017
8	P35	0.01071	0.01310	0.00127	0.00037	0.00004	0.00007	0.00017	
9	P36	0.83395	0.95373	0.78478	0.64741	0.35657	0.53535	0.57896	0.01587
10	P37	0.95115	0.90286	0.74619	0.62411	0.39369	0.55725	0.56999	0.02245
11	P38	0.72315	0.50000	0.91725	0.89156	0.95617	0.97120	0.91109	0.00147
12	P39	0.93265	0.89354	0.79832	0.71295	0.58311	0.71560	0.68288	0.01411
13	P40	0.39649	0.69931	0.94580	0.98187	0.99893	0.98780	0.98595	0.00006
14	P41	0.23273	0.61375	0.95089	0.98991	0.99483	0.98981	0.99591	0.00004
15	P42	0.54531	0.76091	0.94255	0.97550	0.99589	0.98480	0.99536	0.00020
16	P43	0.39677	0.74576	0.97380	0.99495	0.99501	0.93085	0.99777	0.00006
17	P44	0.00838	0.07027	0.37270	0.58645	0.26926	0.69287	0.68830	0.00004
18	P45	0.00564	0.05366	0.32389	0.53702	0.43670	0.68291	0.64691	0.00004
19	P46	0.29654	0.66232	0.95617	0.99012	0.99738	0.95647	0.99532	0.00004
20	P47	0.51694	0.77374	0.96231	0.98865	0.99628	0.96723	0.99287	0.00015
21	P48	0.27331	0.65154	0.95790	0.99136	0.99262	0.98363	0.99635	0.00004

Newman-Keuls test; variable DV_1 (Running)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 5320E2, df = 600.00

Cell No.	TIME	{9} 833.12	{10} 849.35	{11} 1044.9	{12} 901.85	{13} 1223.0	{14} 1309.3	{15} 1163.1	{16} 1241.1
1	P28	0.83395	0.95115	0.72315	0.93265	0.39649	0.23273	0.54531	0.39677
2	P29	0.95373	0.90286	0.50000	0.89354	0.69931	0.61375	0.76091	0.74576
3	P30	0.78478	0.74619	0.91725	0.79832	0.94580	0.95089	0.94255	0.97380
4	P31	0.64741	0.62411	0.89156	0.71295	0.98187	0.98991	0.97550	0.99495
5	P32	0.35657	0.39369	0.95617	0.58311	0.99893	0.99483	0.99589	0.99501
6	P33	0.53535	0.55725	0.97120	0.71560	0.98780	0.98981	0.98480	0.93085
7	P34	0.57896	0.56999	0.91109	0.68288	0.98595	0.99591	0.99536	0.99777
8	P35	0.01587	0.02245	0.00147	0.01411	0.00006	0.00004	0.00020	0.00006
9	P36		0.92688	0.75324	0.92016	0.50180	0.33554	0.63782	0.51234
10	P37	0.92688		0.68639	0.76665	0.51865	0.36953	0.63813	0.53902
11	P38	0.75324	0.68639		0.69786	0.95256	0.94237	0.96314	0.97304
12	P39	0.92016	0.76665	0.69786		0.67191	0.55241	0.75879	0.70586
13	P40	0.50180	0.51865	0.95256	0.67191		0.99660	0.93874	0.99427
14	P41	0.33554	0.36953	0.94237	0.55241	0.99660		0.99167	0.98050
15	P42	0.63782	0.63813	0.96314	0.75879	0.93874	0.99167		0.99218
16	P43	0.51234	0.53902	0.97304	0.70586	0.99427	0.98050	0.99218	
17	P44	0.01686	0.02120	0.33609	0.05186	0.75113	0.50709	0.64304	0.66626
18	P45	0.01173	0.01502	0.28683	0.03861	0.73304	0.60497	0.60569	0.66937
19	P46	0.40536	0.43544	0.95246	0.61197	0.99067	0.98063	0.98815	0.84357
20	P47	0.61789	0.62653	0.97151	0.75961	0.81764	0.99153	0.91395	0.98731
21	P48	0.38162	0.41438	0.95216	0.59571	0.99565	0.91289	0.99161	0.95878

Newman-Keuls test; variable DV_1 (Running)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 5320E2, df = 600.00

Cell No.	TIME	{17} 1505.9	{18} 1527.7	{19} 1276.0	{20} 1182.2	{21} 1290.0
1	P28	0.00838	0.00564	0.29654	0.51694	0.27331
2	P29	0.07027	0.05366	0.66232	0.77374	0.65154
3	P30	0.37270	0.32389	0.95617	0.96231	0.95790
4	P31	0.58645	0.53702	0.99012	0.98865	0.99136
5	P32	0.26926	0.43670	0.99738	0.99628	0.99262
6	P33	0.69287	0.68291	0.95647	0.96723	0.98363
7	P34	0.68830	0.64691	0.99532	0.99287	0.99635
8	P35	0.00004	0.00004	0.00004	0.00015	0.00004
9	P36	0.01686	0.01173	0.40536	0.61789	0.38162
10	P37	0.02120	0.01502	0.43544	0.62653	0.41438
11	P38	0.33609	0.28683	0.95246	0.97151	0.95216
12	P39	0.05186	0.03861	0.61197	0.75961	0.59571
13	P40	0.75113	0.73304	0.99067	0.81764	0.99565
14	P41	0.50709	0.60497	0.98063	0.99153	0.91289
15	P42	0.64304	0.60569	0.98815	0.91395	0.99161
16	P43	0.66626	0.66937	0.84357	0.98731	0.95878
17	P44		0.90209	0.69147	0.66233	0.61368
18	P45	0.90209		0.71324	0.63255	0.66378
19	P46	0.69147	0.71324		0.98429	0.93706
20	P47	0.66233	0.63255	0.98429		0.99043
21	P48	0.61368	0.66378	0.93706	0.99043	

APPENDIX A5.1.3 STEP TEST

A5.1.3.1.1. Step Test: P49 – data spreadsheet

	P49 Step test							
	1 MS	2 Running	3 Lesion	4 LP1	5 LP2	6 LP3	7 LP4	8 LP5
176	0	0	0	5	4	4	4	4
174	0	1	0	4	4	4	3.5	4
207	0	1	1	4	5	4	3.5	3.5
227	0	0	1	4	4	3.5	3.5	4
164	1	1	0	3	3	3	3	3
141	1	0	1	5	4	4.5	5	5
129	1	1	1	3	4	3	3	3
148	1	0	0	3	4	3.5	4	4
195	1	1	1	5	5	5	5	5
154	1	0	1	4	3	3	3.5	3
197	1	0	0	5	5	5	5	5
122	1	1	0	4.5	4	4.5	4.5	4
135	1	0	1	4	4	4.5	4.5	4
203	0	1	1	4	4	4	4	3
193	0	0	1	4	4	3.5	3.5	5
167	0	0	0	4	3.5	3.5	4	4
222	0	1	0	3.5	4	3.5	4	4
182	1	1	1	3.5	3	4	3.5	3.5
209	1	0	1	3	4	4	3.5	4
144	1	0	0	3.5	5	4.5	4.5	4
216	1	1	0	4.5	4.5	4.5	4	4
188	0	1	1	4	4	4	4	3.5
117	0	0	1	3	3	3	3	3
169	0	0	0	4	4	4	3.5	4
234	0	0	1	4.5	5	4	4.5	5
138	1	1	0	4	4	4	3.5	4.5
191	0	1	1	4	3.5	4	5	5
220	1	1	1	3	3.5	3	3	3
131	0	1	0	4	4.5	4	4.5	5
186	1	0	0	4	4	4	3	4
160	0	0	0	4.5	4.5	4	5	4
126	0	0	1	3	3.5	4	3	3
157	1	0	1	4	4	4	3.5	4
190	1	0	0	4	4	3	3	4.5
143	1	0	1	4	4.5	4	4	3.5
196	1	1	0	4.5	4.5	4	4	3.5
145	1	1	1	4	3.5	4	3.5	3
198	1	1	1	4	4	3.5	4	4
139	1	0	0	4	4.5	4.5	4	4.5
210	0	1	1	4	4	3.5	3.5	4
232	0	1	0	4	3.5	4	3.5	3.5
171	0	0	0	3.5	3	3	3	4
205	0	0	1	4	4	4.5	4	4.5
219	0	0	0	4	5	4	4	4
137	0	1	1	4.5	4	4	3	4
250	1	0	0	5	3.5	3.5	3.5	3.5
271	1	1	0	3	4	3	4	3.5

	P49 Step test							
	1 MS	2 Running	3 Lesion	4 RP1	5 RP2	6 RP3	7 RP4	8 RP5
176	0	0	0	4	4	4	3	4.5
174	0	1	0	4	4	4	3.5	3.5
207	0	1	1	5	5	6	5	5
227	0	0	1	6	5	6	5	5
164	1	1	0	5	5	5	4	4
141	1	0	1	6	5.5	7	6	5.5
129	1	1	1	4	4	4	5	4
148	1	0	0	4.5	4	3.5	4	4
195	1	1	1	5	5	4	4	5
154	1	0	1	6	5	4	5	5
197	1	0	0	5	5	5	4	5
122	1	1	0	4.5	5	5	4	4
135	1	0	1	5	5	6	5.5	5
203	0	1	1	4.5	4	4	4.5	3.5
193	0	0	1	5	5	5	5	5
167	0	0	0	3.5	3.5	4	4.5	4
222	0	1	0	4	4.5	5	4.5	4
182	1	1	1	5	4.5	5	4	5
209	1	0	1	4	4	4.5	5	5
144	1	0	0	4.5	4	4	4.5	4
216	1	1	0	4	3	5	4	4.5
188	0	1	1	4.5	4.5	6	4.5	5.5
117	0	0	1	3	3	3	3.5	4
169	0	0	0	4.5	5	5	5	4
234	0	0	1	4.5	4	4.5	4.5	4.5
138	1	1	0	3.5	4.5	3.5	4.5	3.5
191	0	1	1	4	4.5	4	5	4
220	1	1	1	4.5	4	3.5	4	4
131	0	1	0	3.5	4	3.5	3.5	4.5
186	1	0	0	4.5	5	4.5	4.5	4
160	0	0	0	4.5	4	4.5	4.5	4.5
126	0	0	1	3.5	4	4.5	4.5	5
157	1	0	1	3.5	4	4	4	4
190	1	0	0	5	5	3	4.5	4
143	1	0	1	4	4	3.5	4	4.5
196	1	1	0	4	4	3.5	4	4
145	1	1	1	4.5	4.5	5	6	6
198	1	1	1	5.5	5.5	5.5	5	6
139	1	0	0	4	4	5	4.5	4
210	0	1	1	4	4.5	4	3.5	4
232	0	1	0	4.5	4	4	4.5	4
171	0	0	0	4	4	4	4	4.5
205	0	0	1	4	4	4.5	4	4.5
219	0	0	0	3.5	4.5	4	4	4
137	0	1	1	5.5	5	5.5	4	5
250	1	0	0	6.5	6	5	5	4
271	1	1	0	3.5	4	4	4	3

	P49 Step test					
	1 MS	2 Running	3 Lesion	4 LP	5 RP	6 100*RP/LP
176	0	0	0	4.2	3.9	92.86
174	0	1	0	3.9	3.8	97.44
207	0	1	1	4	5.2	130
227	0	0	1	3.8	5.4	142.11
164	1	1	0	3	4.6	153.33
141	1	0	1	4.7	6	127.66
129	1	1	1	3.2	4.2	131.25
148	1	0	0	3.7	4	108.11
195	1	1	1	5	4.6	92
154	1	0	1	3.3	5	151.52
197	1	0	0	5	4.8	96
122	1	1	0	4.3	4.5	104.65
135	1	0	1	4.2	5.3	126.19
203	0	1	1	3.8	4.1	107.89
193	0	0	1	4	5	125
167	0	0	0	3.8	3.9	102.63
222	0	1	0	3.8	4.4	115.79
182	1	1	1	3.5	4.7	134.29
209	1	0	1	3.7	4.5	121.62
144	1	0	0	4.3	4.2	97.67
216	1	1	0	4.3	4.1	95.35
188	0	1	1	3.9	5	128.21
117	0	0	1	3	3.3	110
169	0	0	0	4	4.7	117.5
234	0	0	1	4.6	4.4	95.65
138	1	1	0	4	3.9	97.5
191	0	1	1	4.3	4.3	100
220	1	1	1	3.1	4	129.03
131	0	1	0	4.4	3.8	86.36
186	1	0	0	3.8	4.5	118.42
160	0	0	0	4.4	4.4	100
126	0	0	1	3.3	4.3	130.3
157	1	0	1	3.9	3.9	100
190	1	0	0	3.7	4.3	116.22
143	1	0	1	4	4	100
196	1	1	0	4.1	3.9	95.12
145	1	1	1	3.6	5.2	144.44
198	1	1	1	3.9	5.5	141.03
139	1	0	0	4.3	4.3	100
210	0	1	1	3.8	4	105.26
232	0	1	0	3.7	4.2	113.51
171	0	0	0	3.3	4.1	124.24
205	0	0	1	4.2	4.2	100
219	0	0	0	4.2	4	95.24
137	0	1	1	3.9	5	128.21
250	1	0	0	3.8	5.3	139.47
271	1	1	0	3.5	3.7	105.71

	P49 Step test							
	1 MS	2 Running	3 Lesion	4 LP1	5 LP2	6 LP3	7 LP4	8 LP5
301	0	1	1	3.5	3	4	2.5	3
305	0	1	0	3	3	4	4	4
309	1	0	1	3	2.5	3	2.5	3
306	1	1	1	4	4	3.5	4	4
312	0	1	1	3	3	4	3.5	2.5
313	0	1	0	3	2.5	4	3	2.5
314	0	1	0	3.5	4	4	4	4
315	0	0	0	4	5	4	4	4
317	1	1	1	3	3	2.5	3	2.5
318	1	1	0	3.5	4	4	3.5	4
319	1	1	0	4	3	4	4	4
320	1	1	1	3.5	3	2.5	3	2.5
322	0	1	0	2.5	2.5	2	2.5	3
323	0	1	0	4.5	5	4	4.5	4.5
324	0	0	1	3.5	4	3.5	3.5	4

	P49 Step test							
	1 MS	2 Running	3 Lesion	4 RP1	5 RP2	6 RP3	7 RP4	8 RP5
301	0	1	1	5.5	5.5	5.5	5.5	5.5
305	0	1	0	3.5	4	4	3.5	3.5
309	1	0	1	3	3	3.5	4	3
306	1	1	1	5	5	4.5	4.5	4.5
312	0	1	1	5	5	5	5	5.5
313	0	1	0	3.5	4	4	4.5	4.5
314	0	1	0	3.5	4	4.5	4	4
315	0	0	0	4.5	4.5	4	4	4
317	1	1	1	6.5	7	6.5	5.5	6
318	1	1	0	3.5	4	4	3.5	4
319	1	1	0	4	3.5	4	3.5	3.5
320	1	1	1	6	6	6.5	6	6
322	0	1	0	4	4.5	5	4	4.5
323	0	1	0	4.5	5.5	4.5	4.5	4
324	0	0	1	5	4.5	4.5	5	3.5

	P49 Step test					
	1 MS	2 Running	3 Lesion	4 LP	5 RP	6 100*RP/LP
301	0	1	1	3.2	5.5	171.88
305	0	1	0	3.6	3.7	102.78
309	1	0	1	2.8	3.3	117.86
306	1	1	1	3.9	4.7	120.51
312	0	1	1	3.2	5.1	159.37
313	0	1	0	3	4.1	136.67
314	0	1	0	3.9	4	102.56
315	0	0	0	4.2	4.2	100
317	1	1	1	2.8	6.3	225
318	1	1	0	3.8	3.8	100
319	1	1	0	3.8	3.7	97.37
320	1	1	1	2.9	6.1	210.34
322	0	1	0	2.5	4.4	176
323	0	1	0	4.5	4.6	102.22
324	0	0	1	3.7	4.5	121.62

A5.1.3.1.2. Step test: P49 – Descriptive statistics

	Descriptive Statistics (Step test P49)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	LP Mean	LP Std.Dev.	LP Std.Err	LP -95.00%	LP +95.00%
Total				62	3.80645	0.52787	0.06703	3.67239	3.94050
MS	0			31	3.80967	0.48809	0.08766	3.63064	3.98871
MS	1			31	3.80322	0.57299	0.10291	3.59305	4.01340
Running	0			28	3.92500	0.49712	0.09394	3.73223	4.11776
Running	1			34	3.70882	0.53956	0.09253	3.52056	3.89708
Lesion	0			31	3.89677	0.49698	0.08926	3.71448	4.07906
Lesion	1			31	3.71612	0.55021	0.09882	3.51431	3.91794
MS*Running	0	0		14	3.90714	0.45651	0.12200	3.64355	4.17072
MS*Running	0	1		17	3.72941	0.51206	0.12419	3.46613	3.99268
MS*Running	1	0		14	3.94285	0.55152	0.14740	3.62441	4.26129
MS*Running	1	1		17	3.68823	0.58082	0.14087	3.38960	3.98686
MS*Lesion	0	0		16	3.83750	0.53898	0.13474	3.55029	4.12470
MS*Lesion	0	1		15	3.78000	0.44432	0.11472	3.53393	4.02606
MS*Lesion	1	0		15	3.96000	0.45794	0.11824	3.70639	4.21360
MS*Lesion	1	1		16	3.65625	0.64287	0.16071	3.31368	3.99881
Running*Lesion	0	0		14	4.05000	0.41277	0.11031	3.81167	4.28833
Running*Lesion	0	1		14	3.80000	0.55608	0.14862	3.47892	4.12107
Running*Lesion	1	0		17	3.77058	0.53591	0.12997	3.49504	4.04613
Running*Lesion	1	1		17	3.64705	0.55240	0.13397	3.36304	3.93107
MS*Running*Lesion	0	0	0	7	4.01428	0.36709	0.13875	3.67477	4.35379
MS*Running*Lesion	0	0	1	7	3.80000	0.53851	0.20354	3.30195	4.29804
MS*Running*Lesion	0	1	0	9	3.70000	0.62849	0.20949	3.21690	4.18310
MS*Running*Lesion	0	1	1	8	3.76250	0.38149	0.13487	3.44356	4.08143
MS*Running*Lesion	1	0	0	7	4.08571	0.48107	0.18182	3.64079	4.53063
MS*Running*Lesion	1	0	1	7	3.80000	0.61644	0.23299	3.22988	4.37011
MS*Running*Lesion	1	1	0	8	3.85000	0.43752	0.15468	3.48422	4.21578
MS*Running*Lesion	1	1	1	9	3.54444	0.67659	0.22553	3.02436	4.06452

	Descriptive Statistics (Step test P49)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	RP Mean	RP Std.Dev.	RP Std.Err	RP -95.00%	RP +95.00%
Total				62	4.45806	0.64618	0.08206	4.29396	4.62216
MS	0			31	4.37096	0.52737	0.09472	4.17752	4.56441
MS	1			31	4.54516	0.74513	0.13383	4.27184	4.81847
Running	0			28	4.41785	0.61043	0.11536	4.18115	4.65456
Running	1			34	4.49117	0.68151	0.11687	4.25338	4.72896
Lesion	0			31	4.18709	0.37393	0.06716	4.04993	4.32425
Lesion	1			31	4.72903	0.74663	0.13409	4.45516	5.00290
MS*Running	0	0		14	4.30714	0.51060	0.13646	4.01233	4.60195
MS*Running	0	1		17	4.42352	0.55060	0.13354	4.14043	4.70662
MS*Running	1	0		14	4.52857	0.69772	0.18647	4.12572	4.93142
MS*Running	1	1		17	4.55882	0.80316	0.19479	4.14587	4.97177
MS*Lesion	0	0		16	4.13750	0.29636	0.07409	3.97957	4.29542
MS*Lesion	0	1		15	4.62000	0.61085	0.15772	4.28172	4.95828
MS*Lesion	1	0		15	4.24000	0.44689	0.11538	3.99251	4.48748
MS*Lesion	1	1		16	4.83125	0.86233	0.21558	4.37174	5.29075
Running*Lesion	0	0		14	4.32857	0.39307	0.10505	4.10161	4.55552
Running*Lesion	0	1		14	4.50714	0.77604	0.20740	4.05906	4.95522
Running*Lesion	1	0		17	4.07058	0.32358	0.07848	3.90421	4.23695
Running*Lesion	1	1		17	4.91176	0.69090	0.16757	4.55653	5.26699
MS*Running*Lesion	0	0	0	7	4.17142	0.29277	0.11065	3.90066	4.44219
MS*Running*Lesion	0	0	1	7	4.44285	0.66044	0.24962	3.83204	5.05366
MS*Running*Lesion	0	1	0	9	4.11111	0.31402	0.10467	3.86973	4.35249
MS*Running*Lesion	0	1	1	8	4.77500	0.55997	0.19798	4.30685	5.24315
MS*Running*Lesion	1	0	0	7	4.48571	0.43752	0.16536	4.08107	4.89035
MS*Running*Lesion	1	0	1	7	4.57142	0.92684	0.35031	3.71423	5.42862
MS*Running*Lesion	1	1	0	8	4.02500	0.34948	0.12356	3.73282	4.31718
MS*Running*Lesion	1	1	1	9	5.03333	0.80311	0.26770	4.41600	5.65066

Effect	Descriptive Statistics (Step test P49)								
	Level o Factor	Level o Factor	Level o Factor	N	100*RP/LP Mean	100*RP/LP Std.Dev.	100*RP/LP Std.Err	100*RP/LP -95.00%	100*RP/LP +95.00%
Total				62	119.660	27.1556	3.4487	112.764	126.556
MS	0			31	116.816	22.4708	4.0358	108.573	125.058
MS	1			31	122.505	31.2693	5.6161	111.035	133.974
Running	0			28	113.496	16.0048	3.0246	107.290	119.702
Running	1			34	124.737	33.0869	5.6743	113.192	136.281
Lesion	0			31	109.378	19.3362	3.4728	102.285	116.470
Lesion	1			31	129.943	30.1170	5.4091	118.896	140.990
MS*Running	0	0		14	111.225	15.4747	4.1357	102.290	120.159
MS*Running	0	1		17	121.420	26.5013	6.4275	107.794	135.046
MS*Running	1	0		14	115.767	16.7762	4.4836	106.080	125.453
MS*Running	1	1		17	128.054	39.1434	9.4936	107.928	148.179
MS*Lesion	0	0		16	110.362	21.6342	5.4085	98.834	121.890
MS*Lesion	0	1		15	123.700	21.9584	5.6696	111.539	135.860
MS*Lesion	1	0		15	108.328	17.2462	4.4529	98.777	117.878
MS*Lesion	1	1		16	135.796	35.8959	8.9739	116.668	154.923
Running*Lesion	0	0		14	107.740	13.5395	3.6185	99.922	115.557
Running*Lesion	0	1		14	119.252	16.6534	4.4508	109.636	128.867
Running*Lesion	1	0		17	110.727	23.4055	5.6766	98.693	122.761
Running*Lesion	1	1		17	138.747	35.9580	8.7211	120.259	157.235
MS*Running*Lesion	0	0	0	7	104.638	11.7172	4.4287	93.801	115.475
MS*Running*Lesion	0	0	1	7	117.811	16.7429	6.3282	102.326	133.296
MS*Running*Lesion	0	1	0	9	114.814	26.9006	8.9668	94.136	135.492
MS*Running*Lesion	0	1	1	8	128.852	25.6719	9.0763	107.390	150.314
MS*Running*Lesion	1	0	0	7	110.841	15.4094	5.8242	96.590	125.092
MS*Running*Lesion	1	0	1	7	120.692	17.7686	6.7159	104.259	137.126
MS*Running*Lesion	1	1	0	8	106.128	19.4804	6.8873	89.842	122.414
MS*Running*Lesion	1	1	1	9	147.543	42.7123	14.2374	114.711	180.374

A5.1.3.1.3. Step test: P49 ANOVA – Left Paw step length

Effect	Univariate Tests of Significance for LP (Step test P4 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	894.673	1	894.673	3137.55	0.00000
MS	0.000	1	0.000	0.00	0.99508
Running	0.681	1	0.681	2.38	0.12809
Lesion	0.529	1	0.529	1.855	0.17882
MS*Running	0.018	1	0.018	0.065	0.79916
MS*Lesion	0.185	1	0.185	0.649	0.42399
Running*Lesion	0.063	1	0.063	0.222	0.63953
MS*Running*Lesion	0.084	1	0.084	0.296	0.58885
Error	15.398	54	0.285		

A5.1.3.1.4. Step test: P49 ANOVA – Right Paw step length

Effect	Univariate Tests of Significance for RP (Step test F Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	1215.43(	1	1215.43(	3560.62(	0.00000(
MS	0.362	1	0.362	1.062	0.30736(
Running	0.071	1	0.071	0.209	0.64921(
Lesion	3.946	1	3.946	11.56(	0.00127(
MS*Running	0.07(	1	0.07(	0.206	0.65206(
MS*Lesion	0.024	1	0.024	0.071	0.79130(
Running*Lesion	1.657	1	1.657	4.854	0.03186(
MS*Running*Lesion	0.269	1	0.269	0.789	0.37835(
Error	18.43(	54	0.341		

A5.1.3.1.5. Step test: P49 Post hoc Newman Keuls test on right paw step length (lesion effect)

Cell No.	Newman-Keuls test; variable RP (Step test P Approximate Probabilities for Post Hoc Tests Error: Between MS = .34136, df = 54.000 Lesion	{1} 4.1871	{2} 4.7290
1	0		0.00070(
2	1	0.00070(	

A5.1.3.1.6. Step test: P49 Post hoc Newman Keuls test on right paw step length (right paw*lesion)

Cell No.	Newman-Keuls test; variable RP (Step test P49) Approximate Probabilities for Post Hoc Tests Error: Between MS = .34136, df = 54.000 Running	Lesion	{1} 4.3286	{2} 4.5071	{3} 4.0706	{4} 4.9118
1	0	0		0.40095(	0.22654(	0.02095(
2	0	1	0.40095(		0.10574(	0.06039(
3	1	0	0.22654(	0.10574(		0.00124(
4	1	1	0.02095(	0.06039(	0.00124(	

A5.1.3.1.7. Step test: P49 ANOVA Right paw/left paw ratio

Univariate Tests of Significance for 100*RP/LP (Step test
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	867163.7	1	867163.7	1398.717	0.00000(
MS	349.2	1	349.2	0.563	0.45623:
Running	1801.(	1	1801.(	2.905	0.09405:
Lesion	5901.(	1	5901.(	9.518	0.00320:
MS*Running	0.8	1	0.8	0.001	0.97125:
MS*Lesion	554.4	1	554.4	0.894	0.34852:
Running*Lesion	1007.6	1	1007.6	1.625	0.20781:
MS*Running*Lesion	903.(	1	903.(	1.456	0.23275:
Error	33478.4	54	620.(		

A5.1.3.1.8. Step test: P49 Post hoc Newman Keuls (lesion effect)

Newman-Keuls test; variable 100*RP/LP (Step test P
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 619.97, df = 54.000

Cell No.	Lesion	{1} 109.38	{2} 129.94
1	0		0.00210(
2	1	0.00210(	

A5.1.3.1.9. Step Test P49 Comparison of Left and Right Paw Step Lengths Repeated Measures ANOVA

Repeated Measures Analysis of Variance (Step test P
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2097.848	1	2097.848	6242.825	0.00000(
MS	0.183	1	0.183	0.545	0.463442
Running	0.156	1	0.156	0.463	0.499009
Lesion	0.793	1	0.793	2.359	0.130408
MS*Running	0.081	1	0.081	0.240	0.626337
MS*Lesion	0.038	1	0.038	0.112	0.738754
Running*Lesion	1.184	1	1.184	3.523	0.065921
MS*Running*Lesion	0.026	1	0.026	0.078	0.781432
Error	18.146	54	0.336		
PAW	12.261	1	12.261	42.212	0.00000(
PAW*MS	0.179	1	0.179	0.617	0.435532
PAW*Running	0.597	1	0.597	2.055	0.157522
PAW*Lesion	3.682	1	3.682	12.678	0.000781
PAW*MS*Running	0.008	1	0.008	0.028	0.866870
PAW*MS*Lesion	0.171	1	0.171	0.590	0.445669
PAW*Running*Lesion	0.536	1	0.536	1.847	0.179813
PAW*MS*Running*Lesion	0.327	1	0.327	1.127	0.293040
Error	15.685	54	0.290		

A5.1.3.1.10. Step test P49 Comparison of Left and Right Paw Step length Repeated measures ANOVA post hoc Newman Keuls test (PAW effect)

Newman-Keuls test; variable DV_1 (Step test P49
Approximate Probabilities for Post Hoc Tests
Error: Within MS = .29046, df = 54.000

Cell No.	PAW	{1} 3.8065	{2} 4.4581
1	LP		0.00011
2	RP	0.00011	

A5.1.3.1.11. Step test P49 Comparison of Left and Right Paw Step length Repeated measures ANOVA post hoc Newman Keuls test (PAW*Lesion)

Newman-Keuls test; variable DV_1 (Step test P49)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = .31325, df = 107.

Cell No.	Lesion	PAW	{1} 3.8968	{2} 4.1871	{3} 3.7161	{4} 4.7290
1	0	LP		0.03863	0.20666	0.00011
2	0	RP	0.03863		0.00367	0.00032
3	1	LP	0.20666	0.00367		0.00016
4	1	RP	0.00011	0.00032	0.00016	

A5.1.3.2.1. Step test: P63 Data spreadsheet

	P63 Step test							
	1 MS	2 Running	3 Lesion	4 LP1	5 LP2	6 LP3	7 LP4	8 LP5
227	0	0	1	4	4	4	3.5	4
129	1	1	1	4	3.5	4	3.5	4
148	1	0	0	4	3	3.5	4	4
176	0	0	0	4	3	4	3.5	3.5
141	1	0	1	4	3.5	4	3	4
174	0	1	0	4	4	4	3.5	4
164	1	1	0	4	4	4.5	5	6
207	0	1	1	4	5	5	5.5	5
122	1	1	0	4.5	4	3.5	4.5	4
195	1	1	1	5	4	4.5	4	5
154	1	0	1	4.5	4	4	5	4.5
197	1	0	0	5	4.5	4.5	5	5.5
135	1	0	1	4	4	4	4	4
203	0	1	1	4	4.5	4	4.5	4.5
193	0	0	1	4	4	4	4.5	4
167	0	0	0	4	4	3	4	3
222	0	1	0	4.5	4	4.5	4.5	4
182	1	1	1	4	4	4	3.5	4
209	1	0	1	4	4	3	4	4
216	1	1	0	4	4.5	4	4.5	4
144	1	0	0	4	4.5	4.5	4.5	4
234	0	0	1	4.5	4.5	4.5	4	4
169	0	0	0	4.5	5	5	5	4.5
117	0	0	1	5	5	5	4.5	5
188	0	1	1	4.5	4	4.5	4.5	4.5
138	1	1	0	4	4.1	4.4	3.9	4.2
186	1	0	0	3.5	3.8	3.8	3.4	3.6
157	1	0	1	3.6	3.4	3.6	3.6	3.6
191	0	1	1	3.2	3.5	3.2	3	3
220	1	1	1	4	4	4	4.2	4
126	0	0	1	3.4	3.5	3.4	3.4	3.3
131	0	1	0	3.6	3.3	3.4	3.2	3.4
160	0	0	0	3.5	3.5	3.3	3.3	3.6
190	1	0	0	5	5	4.5	5	4.5
143	1	0	1	4	4	4	3.5	4
196	1	1	0	4	4	4	4	4.5
145	1	1	1	3.5	3	3	3.5	3
198	1	1	1	3	3	3.5	3.5	3.5
139	1	0	0	4	3.5	4	3.5	3.5
210	0	1	1	3	3.5	4	3.5	3.5
232	0	1	0	4	4	4.5	4.5	4
171	0	0	0	4	4	3.5	4	3.5
205	0	0	1	4.5	5	5	4.5	4.5
219	0	0	0	4	5	4	4.5	5
137	0	1	1	4.5	3.5	4	3	4
250	1	0	0	4.5	4.5	4.5	4.5	5
271	1	1	0	4.5	5	5	4.5	4.5

	P63 Step test							
	1 MS	2 Running	3 Lesion	4 RP1	5 RP2	6 RP3	7 RP4	8 RP5
227	0	0	1	6	5	6	5	5
129	1	1	1	5	5	4	5	5.5
148	1	0	0	4	3.5	5	3.5	4
176	0	0	0	4	4	4.5	4.5	5
141	1	0	1	4	4	4	4	3.5
174	0	1	0	3.5	4	4	4	4
164	1	1	0	4	4	4	4.5	4.5
207	0	1	1	5	4.5	5	4.5	5
122	1	1	0	4	3.5	4	3.5	4
195	1	1	1	3	4	3	4	4
154	1	0	1	4	4.5	4.5	5	5
197	1	0	0	4.5	5	4	4	5
135	1	0	1	5	5	4.5	5	5
203	0	1	1	4	4.5	5	4	4.5
193	0	0	1	6	6	6	6.5	6
167	0	0	0	3.5	3	4	4	4
222	0	1	0	4	4	5	4.5	4
182	1	1	1	4.5	4.5	4.5	5	4
209	1	0	1	6	5	5	6	6
216	1	1	0	3.5	4.5	5	4	3
144	1	0	0	4	4	5.5	3.5	4
234	0	0	1	6	6	6	6	6
169	0	0	0	5	5	4.5	5	5.5
117	0	0	1	5	5	5	5	5
188	0	1	1	6.5	6.5	6.5	6.5	6.5
138	1	1	0	4.2	4.3	4	4	4.2
186	1	0	0	4	4	4.3	3.8	4.3
157	1	0	1	3.8	3.5	3.9	4	4
191	0	1	1	3.4	3.4	3.5	3.2	3.3
220	1	1	1	4	4.4	4	4	4
126	0	0	1	3.3	3.1	3	3.3	3.1
131	0	1	0	3.6	3.6	3.8	3.8	3.8
160	0	0	0	3.3	3.5	3.5	3.5	3.5
190	1	0	0	5	4.5	4.5	4.5	5
143	1	0	1	5.5	4.5	5	4.5	4
196	1	1	0	4	4.5	4	5	4.5
145	1	1	1	4	4	5	6	5
198	1	1	1	6	6.5	6	6	6
139	1	0	0	4	3.5	3	3.5	4
210	0	1	1	3.5	4.5	3.5	4	4
232	0	1	0	4.5	4.5	5	3.5	4
171	0	0	0	4	3	3.5	4	4
205	0	0	1	5	5	4.5	4	4.5
219	0	0	0	5	5.5	4.5	5	5.5
137	0	1	1	5	5	5.5	5.5	5.5
250	1	0	0	5	4.5	4	5	4.5
271	1	1	0	5	4.5	5	5	5

	P63 Step test					
	1 MS	2 Running	3 Lesion	4 LP	5 RP	6 100*RP/LP
227	0	0	1	3.9	5.4	138.46
129	1	1	1	3.8	4.9	128.95
148	1	0	0	3.7	4	108.11
176	0	0	0	3.6	4.4	122.22
141	1	0	1	3.7	3.9	105.41
174	0	1	0	3.9	3.9	100
164	1	1	0	4.7	4.2	89.36
207	0	1	1	4.9	4.8	97.96
122	1	1	0	4.1	3.8	92.68
195	1	1	1	4.5	3.6	80
154	1	0	1	4.4	4.6	104.55
197	1	0	0	4.9	4.5	91.84
135	1	0	1	4	4.9	122.5
203	0	1	1	4.3	4.4	102.33
193	0	0	1	4.1	6.1	148.78
167	0	0	0	3.6	3.7	102.78
222	0	1	0	4.3	4.3	100
182	1	1	1	3.9	4.5	115.38
209	1	0	1	3.8	5.6	147.37
216	1	1	0	4.2	4	95.24
144	1	0	0	4.3	4.2	97.67
234	0	0	1	4.3	6	139.53
169	0	0	0	4.8	5	104.17
117	0	0	1	4.9	5	102.04
188	0	1	1	4.4	6.5	147.73
138	1	1	0	4.1	4.1	100.49
186	1	0	0	3.6	4.1	112.71
157	1	0	1	3.6	3.8	107.87
191	0	1	1	3.2	3.4	105.66
220	1	1	1	4	4.1	100.99
126	0	0	1	3.4	3.2	92.94
131	0	1	0	3.4	3.7	110.06
160	0	0	0	3.4	3.5	100.58
190	1	0	0	4.8	4.7	97.92
143	1	0	1	3.9	4.7	120.51
196	1	1	0	4.1	4.4	107.32
145	1	1	1	3.2	4.8	150
198	1	1	1	3.3	6.1	184.85
139	1	0	0	3.7	3.6	97.3
210	0	1	1	3.5	3.9	111.43
232	0	1	0	4.2	4.3	102.38
171	0	0	0	3.8	3.7	97.37
205	0	0	1	4.7	4.6	97.87
219	0	0	0	4.5	5.1	113.33
137	0	1	1	3.8	5.3	139.47
250	1	0	0	4.6	4.6	100
271	1	1	0	4.7	4.9	104.26

	P63 Step test							
	1 MS	2 Running	3 Lesion	4 LP1	5 LP2	6 LP3	7 LP4	8 LP5
301	0	1	1	3	3	2.5	3	2.5
305	0	1	0	4	3	4	3.5	3.5
309	1	0	1	3	3	3	3.5	3.5
306	1	1	1	4	3.5	4	4	4.5
311	0	0	0	4	4.5	4	4	4.5
312	0	1	1	5	4	4.5	5	4.5
313	0	1	0	3.5	3	3	2.5	3
314	0	1	0	5	4.5	4.5	4	4
315	0	0	0	4	4	4.5	4	4
317	1	1	1	4	5	4	4	4
318	1	1	0	4	3	3	4	4
319	1	1	0	4	4	4.5	5	4
320	1	1	1	4	5	4.5	4	4
323	0	1	0	5	5.5	5	4.5	4.5
324	0	1	0	5	5	5	5	5

	P63 Step test							
	1 MS	2 Running	3 Lesion	4 RP1	5 RP2	6 RP3	7 RP4	8 RP5
301	0	1	1	6.5	6	6.5	6	7
305	0	1	0	4	4	4	4.5	4
309	1	0	1	5	5	5	5.5	5.5
306	1	1	1	4	4.5	5	5.5	5
311	0	0	0	4.5	4.5	4	4	4.5
312	0	1	1	5.5	5.5	6.5	5.5	5.5
313	0	1	0	4.5	4	4	4.5	4
314	0	1	0	4.5	4.5	3.5	4	4.5
315	0	0	0	5	4	4	4.5	4
317	1	1	1	8	7.5	7	7.5	7.5
318	1	1	0	4	4.5	4	4	3.5
319	1	1	0	5	5.5	5	5	4.5
320	1	1	1	6.5	6.5	8	7	7
323	0	1	0	5	4	5.5	4	5
324	0	1	0	4.5	4.5	4.5	4.5	5

	P63 Step test					
	1 MS	2 Running	3 Lesion	4 LP	5 RP	6 100*RP/LP
301	0	1	1	2.8	6.4	228.57
305	0	1	0	3.6	4.1	113.89
309	1	0	1	3.2	5.2	162.5
306	1	1	1	4	4.8	120
311	0	0	0	4.2	4.3	102.38
312	0	1	1	4.6	5.7	123.91
313	0	1	0	3	4.2	140
314	0	1	0	4.4	4.2	95.45
315	0	0	0	4.1	4.3	104.88
317	1	1	1	4.2	7.5	178.57
318	1	1	0	3.6	4	111.11
319	1	1	0	4.3	5	116.28
320	1	1	1	4.3	7	162.79
323	0	1	0	4.9	4.7	95.92
324	0	1	0	5	4.6	92

A5.1.3.2.2. Step test: P63 Descriptive statistics

	Descriptive Statistics (Step test P63)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	LP Mean	LP Std.Dev.	LP Std.Err	LP -95.00%	LP +95.00%
Total				62	4.04354	0.52685	0.06691	3.90975	4.17734
MS	0			31	4.04838	0.59937	0.10765	3.82853	4.26823
MS	1			31	4.03871	0.45290	0.08134	3.87258	4.20483
Running	0			28	4.05357	0.49776	0.09406	3.86056	4.24658
Running	1			34	4.03529	0.55698	0.09552	3.84095	4.22963
Lesion	0			32	4.12812	0.51758	0.09149	3.94151	4.31473
Lesion	1			30	3.95333	0.53027	0.09681	3.75532	4.15134
MS*Running	0	0		14	4.09285	0.50454	0.13484	3.80154	4.38417
MS*Running	0	1		17	4.01176	0.68088	0.16513	3.66168	4.36184
MS*Running	1	0		14	4.01428	0.50665	0.13541	3.72175	4.30682
MS*Running	1	1		17	4.05882	0.41841	0.10148	3.84369	4.27395
MS*Lesion	0	0		17	4.04117	0.57343	0.13907	3.74634	4.33600
MS*Lesion	0	1		14	4.05714	0.65128	0.17406	3.68110	4.43318
MS*Lesion	1	0		15	4.22666	0.44475	0.11483	3.98036	4.47296
MS*Lesion	1	1		16	3.86250	0.39644	0.09911	3.65125	4.07374
Running*Lesion	0	0		15	4.10666	0.51612	0.13326	3.82084	4.39248
Running*Lesion	0	1		13	3.99230	0.48898	0.13561	3.69681	4.28779
Running*Lesion	1	0		17	4.14705	0.53399	0.12951	3.87250	4.42161
Running*Lesion	1	1		17	3.92352	0.57285	0.13893	3.62899	4.21806
MS*Running*Lesion	0	0	0	8	4.00000	0.48697	0.17217	3.59288	4.40712
MS*Running*Lesion	0	0	1	6	4.21666	0.54558	0.22273	3.64410	4.78922
MS*Running*Lesion	0	1	0	9	4.07777	0.66853	0.22284	3.56389	4.59166
MS*Running*Lesion	0	1	1	8	3.93750	0.73277	0.25907	3.32488	4.55011
MS*Running*Lesion	1	0	0	7	4.22857	0.55891	0.21124	3.71166	4.74547
MS*Running*Lesion	1	0	1	7	3.80000	0.36968	0.13972	3.45809	4.14190
MS*Running*Lesion	1	1	0	8	4.22500	0.35757	0.12642	3.92606	4.52393
MS*Running*Lesion	1	1	1	9	3.91111	0.43140	0.14380	3.57950	4.24271

	Descriptive Statistics (Step test P63)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	RP Mean	RP Std.Dev.	RP Std.Err	RP -95.00%	RP +95.00%
Total				62	4.62580	0.88056	0.11183	4.40218	4.84942
MS	0			31	4.60322	0.87654	0.15743	4.28170	4.92474
MS	1			31	4.64838	0.89846	0.16137	4.31882	4.97794
Running	0			28	4.52500	0.73667	0.13921	4.23934	4.81065
Running	1			34	4.70882	0.98668	0.16921	4.36455	5.05309
Lesion	0			32	4.25312	0.42196	0.07459	4.10099	4.40526
Lesion	1			30	5.02333	1.06015	0.19355	4.62746	5.41920
MS*Running	0	0		14	4.59285	0.89568	0.23938	4.07570	5.11001
MS*Running	0	1		17	4.61176	0.88803	0.21538	4.15518	5.06834
MS*Running	1	0		14	4.45714	0.56120	0.14998	4.13311	4.78117
MS*Running	1	1		17	4.80588	1.09514	0.26561	4.24281	5.36895
MS*Lesion	0	0		17	4.23529	0.45130	0.10945	4.00325	4.46733
MS*Lesion	0	1		14	5.05000	1.06319	0.28415	4.43612	5.66387
MS*Lesion	1	0		15	4.27333	0.40083	0.10349	4.05136	4.49530
MS*Lesion	1	1		16	5.00000	1.09178	0.27294	4.41822	5.58177
Running*Lesion	0	0		15	4.24666	0.49116	0.12681	3.97467	4.51866
Running*Lesion	0	1		13	4.84615	0.85500	0.23713	4.32948	5.36282
Running*Lesion	1	0		17	4.25882	0.36581	0.08872	4.07073	4.44691
Running*Lesion	1	1		17	5.15882	1.20159	0.29142	4.54102	5.77662
MS*Running*Lesion	0	0	0	8	4.25000	0.59521	0.21044	3.75238	4.74761
MS*Running*Lesion	0	0	1	6	5.05000	1.07284	0.43798	3.92411	6.17588
MS*Running*Lesion	0	1	0	9	4.22222	0.31135	0.10378	3.98289	4.46155
MS*Running*Lesion	0	1	1	8	5.05000	1.13010	0.39955	4.10520	5.99479
MS*Running*Lesion	1	0	0	7	4.24285	0.38668	0.14615	3.88523	4.60047
MS*Running*Lesion	1	0	1	7	4.67142	0.65246	0.24661	4.06799	5.27486
MS*Running*Lesion	1	1	0	8	4.30000	0.43752	0.15468	3.93422	4.66578
MS*Running*Lesion	1	1	1	9	5.25555	1.32203	0.44067	4.23934	6.27176

Effect	Descriptive Statistics (Step test P63)								
	Level o Factor	Level o Factor	Level o Factor	N	100*RP/L P Mean	100*RP/L P Std.Dev.	100*RP/L P Std.Err	100*RP/L P -95.00%	100*RP/LF +95.00%
Total				62	115.945	26.6738	3.3875	109.171	122.719
MS	0			31	115.293	27.1257	4.8719	105.343	125.243
MS	1			31	116.597	26.6463	4.7858	106.823	126.371
Running	0			28	112.271	18.7545	3.5442	104.998	119.543
Running	1			34	118.971	31.7256	5.4409	107.901	130.041
Lesion	0			32	103.740	10.2351	1.8093	100.050	107.430
Lesion	1			30	128.964	32.3251	5.9017	116.893	141.034
MS*Running	0	0		14	111.952	18.0024	4.8113	101.557	122.346
MS*Running	0	1		17	118.044	33.1436	8.0385	101.003	135.085
MS*Running	1	0		14	112.590	20.1548	5.3866	100.953	124.227
MS*Running	1	1		17	119.898	31.2348	7.5755	103.838	135.957
MS*Lesion	0	0		17	105.730	11.6625	2.8285	99.733	111.726
MS*Lesion	0	1		14	126.905	35.5778	9.5085	106.363	147.447
MS*Lesion	1	0		15	101.486	8.1403	2.1018	96.978	105.994
MS*Lesion	1	1		16	130.765	30.2613	7.5653	114.639	146.890
Running*Lesion	0	0		15	103.550	7.8153	2.0179	99.222	107.878
Running*Lesion	0	1		13	122.333	22.7025	6.2965	108.614	136.052
Running*Lesion	1	0		17	103.908	12.2254	2.9651	97.622	110.194
Running*Lesion	1	1		17	134.034	38.0041	9.2173	114.494	153.574
MS*Running*Lesion	0	0	0	8	105.963	8.0065	2.8307	99.270	112.657
MS*Running*Lesion	0	0	1	6	119.936	24.8797	10.1571	93.827	146.046
MS*Running*Lesion	0	1	0	9	105.522	14.6913	4.8971	94.229	116.815
MS*Running*Lesion	0	1	1	8	132.132	42.8456	15.1482	96.312	167.952
MS*Running*Lesion	1	0	0	7	100.792	7.1478	2.7016	94.182	107.403
MS*Running*Lesion	1	0	1	7	124.387	22.4568	8.4878	103.618	145.156
MS*Running*Lesion	1	1	0	8	102.092	9.3721	3.3135	94.257	109.927
MS*Running*Lesion	1	1	1	9	135.725	35.7143	11.9048	108.273	163.178

A5.1.3.2.3. Step test: P63 Left Paw step length ANOVA

Effect	Univariate Tests of Significance for LP (Step test P6 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	999.941	1	999.941	3470.05	0.00000
MS	0.004	1	0.004	0.015	0.90311
Running	0.008	1	0.008	0.029	0.86513
Lesion	0.422	1	0.422	1.467	0.23112
MS*Running	0.090	1	0.090	0.316	0.57662
MS*Lesion	0.638	1	0.638	2.217	0.14232
Running*Lesion	0.055	1	0.055	0.194	0.66132
MS*Running*Lesion	0.211	1	0.211	0.735	0.39492
Error	15.560	54	0.288		

A5.1.3.2.4. Step test: P63 Right Paw step length ANOVA

Effect	Univariate Tests of Significance for RP (Step test F Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	1307.27(	1	1307.27(	1922.23	0.00000(
MS	0.01(	1	0.01(	0.015	0.90399
Running	0.359	1	0.359	0.527	0.47089
Lesion	8.643	1	8.643	12.709	0.00077
MS*Running	0.426	1	0.426	0.627	0.43188
MS*Lesion	0.057	1	0.057	0.083	0.77415
Running*Lesion	0.293	1	0.293	0.431	0.51421
MS*Running*Lesion	0.237	1	0.237	0.349	0.55707
Error	36.724	54	0.68(		

A5.1.3.2.5. Step Test: P63 Post hoc Newman Keuls (lesion effect)

Cell No.	Newman-Keuls test; variable RP (Step test P(Approximate Probabilities for Post Hoc Tests Error: Between MS = .68008, df = 54.000 Lesion	{1} 4.2531	{2} 5.0233
1	0		0.00066
2	1	0.00066	

A5.1.3.2.6. Step Test: P63 Right Paw/ Left Paw ANOVA

Effect	Univariate Tests of Significance for 100*RP/LP (Step test Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	817928.9	1	817928.9	1368.618	0.00000(
MS	0.3	1	0.3	0.000	0.98233
Running	566.9	1	566.9	0.949	0.33443
Lesion	9114.8	1	9114.8	15.252	0.00026
MS*Running	0.7	1	0.7	0.001	0.97198
MS*Lesion	263.9	1	263.9	0.442	0.50916
Running*Lesion	489.9	1	489.9	0.820	0.36927
MS*Running*Lesion	6.4	1	6.4	0.011	0.91774
Error	32272.1	54	597.6		

A5.1.3.2.7. Step Test: P63 Post hoc Newman Keuls (lesion effect)

Cell No.	Newman-Keuls test; variable 100*RP/LP (Step test F Approximate Probabilities for Post Hoc Tests Error: Between MS = 597.63, df = 54.000 Lesion	{1} 103.74	{2} 128.96
1	0		0.00026
2	1	0.00026	

A5.1.3.2.8. Step Test P63 Comparison of Left and Right Paw Step Lengths Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (Step test P Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2296.931	1	2296.931	3790.451	0.00000(
MS	0.014	1	0.014	0.023	0.881001
Running	0.129	1	0.129	0.212	0.646841
Lesion	2.621	1	2.621	4.326	0.042296
MS*Running	0.456	1	0.456	0.752	0.389721
MS*Lesion	0.538	1	0.538	0.887	0.350364
Running*Lesion	0.047	1	0.047	0.077	0.782782
MS*Running*Lesion	0.449	1	0.449	0.741	0.393169
Error	32.723	54	0.606		
PAW	10.280	1	10.280	28.378	0.000002
PAW*MS	0.001	1	0.001	0.002	0.968025
PAW*Running	0.238	1	0.238	0.658	0.420853
PAW*Lesion	6.444	1	6.444	17.788	0.000095
PAW*MS*Running	0.062	1	0.062	0.171	0.681272
PAW*MS*Lesion	0.158	1	0.158	0.435	0.512316
PAW*Running*Lesion	0.303	1	0.303	0.835	0.364796
PAW*MS*Running*Lesion	0.000	1	0.000	0.001	0.974887
Error	19.562	54	0.362		

A5.1.3.2.9. Step test P63 Comparison of Left and Right Paw Step length Repeated measures ANOVA post hoc Newman Keuls test (PAW effect)

Cell No.	Newman-Keuls test; variable DV_1 (Step test P Approximate Probabilities for Post Hoc Tests Error: Within MS = .36226, df = 54.000 PAW	{1} 4.0435	{2} 4.6258
1	LP		0.00011
2	RP	0.00011	

A5.1.3.2.10. Step test P63 Comparison of Left and Right Paw Step length Repeated measures ANOVA post hoc Newman Keuls test (PAW*Lesion)

Cell No.	Newman-Keuls test; variable DV_1 (Step test P63) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = .48412, df = 10 Lesion	PAW	{1} 4.1281	{2} 4.2531	{3} 3.9533	{4} 5.0233
1	0	LP		0.41754(	0.32536(	0.000109
2	0	RP	0.41754(		0.21196(	0.000138
3	1	LP	0.32536(	0.21196(		0.000161
4	1	RP	0.000109	0.000138	0.000161	

A5.1.3.3.1. Step test: Repeated measures ANOVA (P49 and P63) of Left Paw step length

Effect	Repeated Measures Analysis of Variance (Step test repeated measu Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	1890.634	1	1890.634	5518.042	0.000000
MS	0.003	1	0.003	0.009	0.926764
Running	0.740	1	0.740	2.161	0.147380
Lesion	0.537	1	0.537	1.568	0.215854
MS*Running	0.118	1	0.118	0.343	0.560576
MS*Lesion	1.260	1	1.260	3.677	0.060457
Running*Lesion	0.006	1	0.006	0.018	0.894775
MS*Running*Lesion	0.005	1	0.005	0.014	0.907864
Error	18.502	54	0.343		
TIME	1.394	1	1.394	5.879	0.018694
TIME*MS	0.002	1	0.002	0.010	0.919595
TIME*Running	0.094	1	0.094	0.397	0.531538
TIME*Lesion	0.087	1	0.087	0.368	0.546370
TIME*MS*Running	0.287	1	0.287	1.211	0.276007
TIME*MS*Lesion	0.264	1	0.264	1.114	0.295811
TIME*Running*Lesion	0.077	1	0.077	0.326	0.570562
TIME*MS*Running*Lesion	0.229	1	0.229	0.966	0.329973
Error	12.804	54	0.237		

A5.1.3.3.2. Step Test: Post hoc Newman Keuls test (Time effect)

Cell No.	Newman-Keuls test; variable DV_1 (Step test repeated measure Approximate Probabilities for Post Hoc Tests Error: Within MS = .23712, df = 54.000 TIME	{1} 3.8065	{2} 4.0248
1	LP		0.01571
2	LP	0.01571	

A5.1.3.3.3. Step Test: Repeated measures ANOVA (P49 and P63) of Right Paw step length

	Repeated Measures Analysis of Variance (Step test repeated measure Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2533.67	1	2533.67	3291.03	0.00000
MS	0.101	1	0.101	0.131	0.71839
Running	0.591	1	0.591	0.768	0.38470
Lesion	11.194	1	11.194	14.540	0.00035
MS*Running	0.014	1	0.014	0.019	0.89145
MS*Lesion	0.008	1	0.008	0.010	0.92166
Running*Lesion	1.483	1	1.483	1.927	0.17083
MS*Running*Lesion	0.588	1	0.588	0.764	0.38592
Error	41.573	54	0.770		
TIME	1.065	1	1.065	3.479	0.06757
TIME*MS	0.285	1	0.285	0.930	0.33917
TIME*Running	0.153	1	0.153	0.500	0.48265
TIME*Lesion	0.288	1	0.288	0.941	0.33641
TIME*MS*Running	0.245	1	0.245	0.801	0.37485
TIME*MS*Lesion	0.018	1	0.018	0.058	0.81082
TIME*Running*Lesion	0.363	1	0.363	1.187	0.28078
TIME*MS*Running*Lesion	0.001	1	0.001	0.004	0.95254
Error	16.521	54	0.306		

A5.1.3.3.4. Step Test: Repeated measures ANOVA (P49 and P63) of Right Paw/ Left Paw

	Repeated Measures Analysis of Variance (Step test repeated measu Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	170415	1	170415	1614.521	0.00000
MS	52	1	52	0.049	0.825862
Running	3289	1	3289	3.116	0.083171
Lesion	12289	1	12289	11.642	0.001228
MS*Running	85	1	85	0.080	0.778016
MS*Lesion	1547	1	1547	1.466	0.231269
Running*Lesion	1103	1	1103	1.045	0.311271
MS*Running*Lesion	595	1	595	0.563	0.456146
Error	56998	54	1056		
TIME	132	1	132	0.438	0.510800
TIME*MS	370	1	370	1.226	0.273126
TIME*Running	7	1	7	0.024	0.878581
TIME*Lesion	5	1	5	0.016	0.898900
TIME*MS*Running	110	1	110	0.364	0.548991
TIME*MS*Lesion	36	1	36	0.121	0.729683
TIME*Running*Lesion	136	1	136	0.452	0.504351
TIME*MS*Running*Lesion	328	1	328	1.086	0.302040
Error	16315	54	302		

APPENDIX A5.1.4 OPEN FIELD

A5.1.4.1.1.1. Open Field: P49 Full 10 minutes Data Spreadsheet

	Sheet1					
	1 MS	2 Running	3 Lesion	4 Distance moved Tota (cm)	5 Arena duration (s)	6 In zone Inner zone duration (s
122	1	1	0	5437.8534	498.33313	21.333324
135	1	0	1	9454.28175	498.33313	21.499993
197	1	0	0	8712.73318	498.33313	28.166655
195	1	1	1	5626.08359	498.33313	44.833316
154	1	0	1	6873.22594	498.33313	6.333332
203	0	1	1	4809.78441	498.33313	39.666649
193	0	0	1	7935.18632	498.33313	107.333288
167	0	0	0	8354.85172	498.33313	55.499975
222	0	1	0	6113.54177	498.33313	42.833317
182	1	1	1	8157.66738	498.33313	65.333308
209	1	0	1	7666.34971	498.33313	54.166646
144	1	0	0	7066.54732	498.33313	55.333309
216	1	1	0	6531.38945	498.33313	48.499983
188	0	1	1	5950.15153	498.33313	31.166654
169	0	0	0	7543.29227	498.33313	72.99997
234	0	0	1	7561.30633	498.33313	62.999978
117	0	0	1	5716.54548	498.33313	54.499981
126	0	0	1	6850.09935	498.33313	30.83332
138	1	1	0	6366.34429	498.33313	66.833305
157	1	0	1	7715.44479	498.33313	35.833319
131	0	1	0	6220.0112	498.33313	23.499992
191	0	1	1	6175.25884	498.33313	39.499983
160	0	0	0	6519.08372	498.33313	38.999989
186	1	0	0	6369.10568	498.33313	24.666653
220	1	1	1	4902.47825	498.33313	23.999988
164	1	1	0	5203.70371	498.33313	28.333323
129	1	1	1	6438.40522	498.33313	23.666659
148	1	0	0	7540.68747	498.33313	31.833319
141	1	0	1	7865.624	498.33313	26.49999
207	0	1	1	2399.71644	498.33313	0.666667
176	0	0	0	5241.04837	498.33313	35.16665
174	0	1	0	5089.87736	498.33313	25.833324
227	0	0	1	4383.95044	498.33313	0
190	1	0	0	7585.5274	498.33313	22.5090247
143	1	0	1	7021.56266	498.33313	35.7810126
196	1	1	0	6513.35942	498.33313	31.345901
145	1	1	1	4491.36954	498.33313	0
198	1	1	0	7660.90438	498.33313	34.4471444
139	1	0	0	8049.13113	498.33313	38.5487889
210	0	1	1	5719.3182	498.33313	35.7476659
232	0	1	0	6387.88093	498.33313	24.2097065
171	0	0	0	6890.67197	498.33313	11.4712659
219	0	0	0	7117.60017	498.33313	54.7886334
205	0	0	1	6793.86202	498.33313	14.3724291

	Sheet1					
	1 MS	2 Running	3 Lesion	4 In zone Inner zone frequenc	5 In zone Inner zone latency	6 In zone Outer zone duration (s
122	1	1	0	11	36.666652	476.999809
135	1	0	1	9	57.83331	476.83314
197	1	0	0	14	71.166638	470.166478
195	1	1	1	16	75.833303	453.499817
154	1	0	1	3	293.499882	491.999801
203	0	1	1	19	41.16665	458.666484
193	0	0	1	40	6.666664	390.999845
167	0	0	0	30	35.166652	442.833158
222	0	1	0	23	7.499997	455.499816
182	1	1	1	32	17.833326	432.999825
209	1	0	1	27	47.166647	444.166487
144	1	0	0	28	51.833312	442.999824
216	1	1	0	24	34.999986	449.83315
188	0	1	1	16	30.333321	467.166479
169	0	0	0	38	34.499986	425.333163
234	0	0	1	31	46.999981	435.333155
117	0	0	1	25	45.999981	443.833152
126	0	0	1	17	64.499974	467.499813
138	1	1	0	32	53.333312	431.499828
157	1	0	1	15	106.166624	462.499814
131	0	1	0	15	78.499968	474.833141
191	0	1	1	21	62.666641	458.83315
160	0	0	0	22	24.333323	459.333144
186	1	0	0	16	121.166618	473.66648
220	1	1	1	14	81.666634	474.333145
164	1	1	0	20	52.333312	469.99981
129	1	1	1	15	5.833331	474.666474
148	1	0	0	19	37.499985	466.499814
141	1	0	1	15	20.166658	471.833143
207	0	1	1	1	437.999824	497.666466
176	0	0	0	18	85.499965	463.166483
174	0	1	0	14	106.33329	472.499809
227	0	0	1	0	498.333133	498.333133
190	1	0	0	14	24.4764802	475.824108
143	1	0	1	21	67.0602202	462.55212
196	1	1	0	18	78.6982196	466.987232
145	1	1	1	0	498.333133	498.333133
198	1	1	0	31	25.1434142	463.885989
139	1	0	0	17	28.6448181	459.784344
210	0	1	1	18	0.600240658	462.585467
232	0	1	0	21	7.10284779	474.123426
171	0	0	0	13	92.1702877	486.861867
219	0	0	0	25	31.6126747	443.5445
205	0	0	1	8	7.73643515	483.960704

	Sheet1					
	1 MS	2 Running	3 Lesion	4 In zone Outer zone frequenc	5 Velocity Maximum (cm/s	6 Velocity Mear (cm/s)
122	1	1	0	12	75.2234486	10.9157353
135	1	0	1	10	116.207611	18.9781577
197	1	0	0	15	454.082812	17.4896016
195	1	1	1	17	79.1377047	11.2935817
154	1	0	1	4	87.5328185	13.7970463
203	0	1	1	20	163.952774	9.65497418
193	0	0	1	40	85.7846248	15.9287835
167	0	0	0	31	95.0757081	16.7712049
222	0	1	0	24	79.0140764	12.2720865
182	1	1	1	33	101.079053	16.3753842
209	1	0	1	28	88.4246855	15.3891324
144	1	0	0	29	85.2111803	14.1851128
216	1	1	0	25	83.8430971	13.1108573
188	0	1	1	17	79.3952785	11.9441029
169	0	0	0	39	81.2060016	15.1421125
234	0	0	1	32	79.7208037	15.1782722
117	0	0	1	26	82.7339335	11.4751714
126	0	0	1	18	78.5599962	13.7506228
138	1	1	0	33	130.69457	12.7795514
157	1	0	1	16	338.605486	15.4876847
131	0	1	0	15	152.900276	12.4858083
191	0	1	1	21	192.773155	12.3959748
160	0	0	0	23	82.0492565	13.0861553
186	1	0	0	17	89.6081084	12.7850954
220	1	1	1	14	79.210967	9.84104421
164	1	1	0	21	69.7784857	10.4457123
129	1	1	1	16	72.1750635	12.9242041
148	1	0	0	19	165.388693	15.1368831
141	1	0	1	16	140.856809	15.7891473
207	0	1	1	2	71.8266706	4.81709736
176	0	0	0	18	179.882142	10.5206765
174	0	1	0	15	82.9095302	10.2172218
227	0	0	1	1	72.6731437	8.80017206
190	1	0	0	15	304.001971	15.736587
143	1	0	1	21	307.634582	14.5666116
196	1	1	0	19	278.811499	13.5123165
145	1	1	1	1	98.1308425	9.31758912
198	1	1	0	32	316.622777	15.8929606
139	1	0	0	18	532.413632	16.698358
210	0	1	1	19	263.617795	11.8650351
232	0	1	0	21	829.53786	13.2520046
171	0	0	0	13	559.585927	14.2950718
219	0	0	0	26	301.065711	14.7658467
205	0	0	1	9	271.994899	14.0942343

	Sheet1					
	1 MS	2 Running	3 Lesion	4 Distance moved Tota (cm)	5 Arena duration (s)	6 In zone Inner zone duration
137	0	1	1	5377.80289	498.33313	0
250	1	0	0	6425.60005	498.33313	71.833303
271	1	1	0	6609.91607	498.33313	61.833309
301	0	1	1	3323.28741	498.33313	13.66666
305	0	1	0	5066.92493	498.33313	18.166658
309	1	0	1	6063.62753	498.33313	31.999987
306	1	1	1	6498.77823	498.33313	53.999979
312	0	1	1	6557.74743	498.33313	54.49998
313	0	1	0	5005.48075	498.33313	34.666651
315	0	0	0	7303.38151	498.33313	55.999974
314	0	1	0	4802.78733	498.33313	47.833315
317	1	1	1	6155.98787	498.33313	28.833321
319	1	1	0	6574.19917	498.33313	38.83332
318	1	1	0	5875.83779	498.33313	20.499992
320	1	1	1	5841.35507	498.33313	37.499986
322	0	0	1	7644.80087	498.33313	59.833307
323	0	1	0	6276.81107	498.33313	36.83332
324	0	1	0	5429.61707	498.33313	39.499986

	Sheet1					
	1 MS	2 Running	3 Lesion	4 In zone Inner zone frequenc	5 In zone Inner zone latency	6 In zone Outer zone duration (s
137	0	1	1	0	498.333133	498.333133
250	1	0	0	29	22.333324	426.49983
271	1	1	0	34	9.166663	436.499824
301	0	1	1	7	12.833328	484.666473
305	0	1	0	11	65.16664	480.166475
309	1	0	1	16	37.833318	466.333146
306	1	1	1	26	29.666654	444.333154
312	0	1	1	25	5.166664	443.833153
313	0	1	0	13	58.33331	463.666482
315	0	0	0	25	8.166663	442.333159
314	0	1	0	18	36.666652	450.499818
317	1	1	1	15	40.499983	469.499812
319	1	1	0	26	10.499995	459.499813
318	1	1	0	14	63.833307	477.833141
320	1	1	1	21	14.833327	460.833147
322	0	0	1	27	70.499971	438.499826
323	0	1	0	24	39.66665	461.499813
324	0	1	0	18	62.833308	458.833147

	Sheet1					
	1 MS	2 Running	3 Lesion	4 In zone Outer zone frequenc	5 Velocity Maximum (cm/s	6 Velocity Mear (cm/s)
137	0	1	1	1	89.845027	11.1565431
250	1	0	0	30	89.9627891	12.8984997
271	1	1	0	35	160.298797	13.2684887
301	0	1	1	8	72.4904291	6.6710378
305	0	1	0	12	75.6081747	10.1711489
309	1	0	1	17	107.442587	12.1718901
306	1	1	1	27	101.389101	13.0453941
312	0	1	1	26	111.111375	13.1637675
313	0	1	0	14	127.207144	10.0478077
315	0	0	0	25	136.719979	14.6605239
314	0	1	0	19	78.9671771	9.64092836
317	1	1	1	15	208.336453	12.3572912
319	1	1	0	27	76.8742338	13.1967919
318	1	1	0	15	140.903265	11.7949283
320	1	1	1	22	79.1663206	11.7257088
322	0	0	1	27	73.5655169	15.3458769
323	0	1	0	25	84.6541114	12.5998263
324	0	1	0	19	141.827915	10.8992022

A5.1.4.1.1.2. Open Field: P49 Full ten minutes Distance travelled Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level of Factor	Level of Factor	Level of Factor	N	Distance moved Total (cm Mean	Distance moved Total (cm) Std.Dev.	Distance moved Tota (cm) Std.Err	Distance moved Total (cm) -95.00%	Distance moved Total (cm) +95.00%
Total				62	6384.78	1267.95	161.030	6062.78	6706.78
MS	0			31	6018.11	1323.19	237.652	5532.76	6503.46
MS	1			31	6751.45	1113.69	200.026	6342.94	7159.96
Running	0			28	7152.32	1038.32	196.224	6749.70	7554.94
Running	1			34	5752.69	1085.46	186.155	5373.95	6131.43
Lesion	0			32	6496.42	1021.84	180.637	6128.01	6864.84
Lesion	1			30	6265.70	1495.70	273.077	5707.19	6824.20
MS*Running	0	0		14	6846.83	1088.63	290.950	6218.27	7475.39
MS*Running	0	1		17	5335.64	1106.38	268.338	4766.79	5904.49
MS*Running	1	0		14	7457.81	923.59	246.841	6924.55	7991.08
MS*Running	1	1		17	6169.74	914.55	221.811	5699.52	6639.96
MS*Lesion	0	0		16	6210.17	1050.14	262.535	5650.59	6769.75
MS*Lesion	0	1		15	5813.25	1575.78	406.865	4940.61	6685.89
MS*Lesion	1	0		16	6782.67	938.26	234.564	6282.71	7282.64
MS*Lesion	1	1		15	6718.14	1308.55	337.868	5993.49	7442.80
Running*Lesion	0	0		14	7194.23	896.46	239.589	6676.63	7711.83
Running*Lesion	0	1		14	7110.41	1196.55	319.792	6419.54	7801.28
Running*Lesion	1	0		18	5953.69	759.34	178.980	5576.07	6331.30
Running*Lesion	1	1		16	5526.57	1354.84	338.710	4804.63	6248.51
MS*Running*Lesio	0	0	0	7	6995.70	963.818	364.289	6104.32	7887.08
MS*Running*Lesio	0	0	1	7	6697.96	1259.81	476.164	5532.83	7863.09
MS*Running*Lesio	0	1	0	9	5599.21	641.228	213.742	5106.32	6092.10
MS*Running*Lesio	0	1	1	8	5039.13	1462.26	516.988	3816.65	6261.61
MS*Running*Lesio	1	0	0	7	7392.76	848.712	320.783	6607.83	8177.69
MS*Running*Lesio	1	0	1	7	7522.87	1057.37	399.649	6544.96	8500.78
MS*Running*Lesio	1	1	0	9	6308.16	728.975	242.991	5747.82	6868.50
MS*Running*Lesio	1	1	1	8	6014.01	1118.97	395.618	5078.52	6949.50

A5.1.4.1.1.3. Open Field: P49 Full ten minutes Distance Travelled ANOVA

Effect	Univariate Tests of Significance for Distance moved Total (cm) (Open field 10 r Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2.548216E+0	1	2.548216E+0	2397.29	0.00000
MS	8.090527E+0	1	8.090527E+0	7.611	0.00790
Running	3.057405E+0	1	3.057405E+0	28.763	0.00000
Lesion	1.000526E+0	1	1.000526E+0	0.941	0.33627
MS*Running	2.044000E+0	1	2.044000E+0	0.192	0.66276
MS*Lesion	4.612007E+0	1	4.612007E+0	0.434	0.51288
Running*Lesion	4.517095E+0	1	4.517095E+0	0.425	0.51723
MS*Running*Lesion	2.512227E+0	1	2.512227E+0	0.024	0.87839
Error	5.739946E+0	54	1.062953E+0		

A5.1.4.1.1.4. Open Field: P49 Full ten minutes Distance travelled post hoc Newman Keuls (MS effect)

	Newman-Keuls test; variable Distance moved Total (cm) (Open field 10 minute Approximate Probabilities for Post Hoc Tests Error: Between MS = 1063E3, df = 54.000		
Cell No.	MS	{1} 6018.1	{2} 6751.5
1	0		0.007196
2	1	0.007196	

A5.1.4.1.1.5. Open Field: P49 Full ten minutes Distance travelled post hoc Newman Keuls (Running effect)

	Newman-Keuls test; variable Distance moved Total (cm) (Open field 10 minute Approximate Probabilities for Post Hoc Tests Error: Between MS = 1063E3, df = 54.000		
Cell No.	Running	{1} 7152.3	{2} 5752.7
1	0		0.000114
2	1	0.000114	

A5.1.4.1.1.6. Open Field: P49 Full Ten Minutes Inner Zone Duration Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level c Factor	Level of Factor	Level of Factor	N	In zone Inner zone duration (s) Mean	In zone Inner zone duration (s) Std.Dev.	In zone Inner zone duration (s) Std.Err	In zone Inner zone duration (s) -95.00%	In zone Inner zone duration (s) +95.00%
Total				62	36.7455	20.1465	2.5586	31.6292	41.8617
MS	0			31	37.5190	23.0310	4.1365	29.0711	45.9668
MS	1			31	35.9719	17.1356	3.0776	29.6865	42.2573
Running	0			28	40.7072	23.2470	4.3932	31.6930	49.7215
Running	1			34	33.4828	16.8469	2.8892	27.6046	39.3610
Lesion	0			32	38.8485	16.2103	2.8656	33.0040	44.6930
Lesion	1			30	34.5022	23.7227	4.3311	25.6440	43.3604
MS*Running	0	0		14	46.7713	27.7453	7.4152	30.7516	62.7910
MS*Running	0	1		17	29.8994	15.2479	3.6981	22.0596	37.7392
MS*Running	1	0		14	34.6432	16.5353	4.4192	25.0960	44.1904
MS*Running	1	1		17	37.0662	18.0440	4.3763	27.7888	46.3436
MS*Lesion	0	0		16	38.6439	16.1655	4.0413	30.0299	47.2579
MS*Lesion	0	1		15	36.3191	29.2174	7.5439	20.1390	52.4991
MS*Lesion	1	0		16	39.0531	16.7826	4.1956	30.1103	47.9960
MS*Lesion	1	1		15	32.6853	17.4644	4.5093	23.0138	42.3568
Running*Lesion	0	0		14	42.7012	18.6844	4.9936	31.9132	53.4893
Running*Lesion	0	1		14	38.7133	27.6541	7.3908	22.7462	54.6803
Running*Lesion	1	0		18	35.8519	13.8016	3.2530	28.9886	42.7153
Running*Lesion	1	1		16	30.8175	19.8545	4.9636	20.2378	41.3973
MS*Running*Lesi	0	0	0	7	46.4180	19.8068	7.4862	28.0998	64.7363
MS*Running*Lesi	0	0	1	7	47.1246	35.7114	13.4976	14.0970	80.1522
MS*Running*Lesi	0	1	0	9	32.5973	10.0864	3.3621	24.8442	40.3505
MS*Running*Lesi	0	1	1	8	26.8642	19.8814	7.0291	10.2429	43.4855
MS*Running*Lesi	1	0	0	7	38.9844	18.2168	6.8853	22.1366	55.8322
MS*Running*Lesi	1	0	1	7	30.3020	14.7164	5.5623	16.6915	43.9125
MS*Running*Lesi	1	1	0	9	39.1066	16.7095	5.5698	26.2625	51.9507
MS*Running*Lesi	1	1	1	8	34.7708	20.3403	7.1914	17.7658	51.7757

A5.1.4.1.1.7. Open Field: P49 Full Ten Minutes Inner Zone Duration ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone duration (s) (Open field 10 minu Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	84046.91	1	84046.91	206.2326	0.000000
MS	92.78	1	92.78	0.2277	0.635182
Running	833.29	1	833.29	2.0447	0.158497
Lesion	311.99	1	311.99	0.7656	0.385468
MS*Running	1432.97	1	1432.97	3.5162	0.066183
MS*Lesion	61.20	1	61.20	0.1502	0.699905
Running*Lesion	4.20	1	4.20	0.0103	0.919539
MS*Running*Lesion	111.48	1	111.48	0.2735	0.603107
Error	22006.87	54	407.53		

A5.1.4.1.1.8. Open Field: P49 Full Ten Minutes Frequency of Entry into the inner zone Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level of Factor	Level of Factor	Level of Factor	N	In zone Inner zone frequency Mean	In zone Inner zone frequency Std.Dev.	In zone Inner zone frequency Std.Err	In zone Inner zone frequency -95.00%	In zone Inner zone frequency +95.00%
Total				62	18.9516	8.9615	1.13811	16.6758	21.2274
MS	0			31	18.8064	9.7242	1.74652	15.2395	22.3733
MS	1			31	19.0967	8.2879	1.48856	16.0567	22.1368
Running	0			28	20.0714	9.5216	1.79941	16.3793	23.7635
Running	1			34	18.0294	8.5048	1.45856	15.0619	20.9968
Lesion	0			32	21.0937	7.1723	1.26790	18.5078	23.6796
Lesion	1			30	16.6666	10.1720	1.85716	12.8683	20.4649
MS*Running	0	0		14	22.7857	10.9907	2.93740	16.4398	29.1315
MS*Running	0	1		17	15.5294	7.3409	1.78044	11.7550	19.3037
MS*Running	1	0		14	17.3571	7.1855	1.92041	13.2083	21.5059
MS*Running	1	1		17	20.5294	9.0562	2.19645	15.8731	25.1856
MS*Lesion	0	0		16	20.5000	7.0804	1.77012	16.7270	24.2729
MS*Lesion	0	1		15	17.0000	11.9223	3.07834	10.3976	23.6023
MS*Lesion	1	0		16	21.6875	7.4450	1.86126	17.7203	25.6547
MS*Lesion	1	1		15	16.3333	8.4824	2.19016	11.6359	21.0307
Running*Lesion	0	0		14	22.0000	7.4317	1.98621	17.7090	26.2909
Running*Lesion	0	1		14	18.1428	11.1828	2.98872	11.6861	24.5996
Running*Lesion	1	0		18	20.3888	7.0971	1.67281	16.8595	23.9182
Running*Lesion	1	1		16	15.3750	9.3728	2.34320	10.3805	20.3694
MS*Running*Les	0	0	0	7	24.4285	8.1005	3.06172	16.9368	31.9203
MS*Running*Les	0	0	1	7	21.1428	13.7771	5.20726	8.4011	33.8845
MS*Running*Les	0	1	0	9	17.4444	4.5582	1.51942	13.9406	20.9482
MS*Running*Les	0	1	1	8	13.3750	9.4557	3.34310	5.4698	21.2801
MS*Running*Les	1	0	0	7	19.5714	6.3471	2.39897	13.7013	25.4415
MS*Running*Les	1	0	1	7	15.1428	7.7551	2.93118	7.9705	22.3152
MS*Running*Les	1	1	0	9	23.3333	8.1700	2.72335	17.0532	29.6134
MS*Running*Les	1	1	1	8	17.3750	9.4708	3.34844	9.4572	25.2928

A5.1.4.1.1.9. Open Field: P49 Full Ten Minutes Frequency of Entry into the inner zone ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone frequency (Open field 10 minu Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	22083.38	1	22083.38	291.6285	0.00000(
MS	0.90	1	0.90	0.0119	0.913672
Running	73.49	1	73.49	0.9705	0.32894(
Lesion	301.62	1	301.62	3.9831	0.051014
MS*Running	412.4(	1	412.4(	5.446(	0.023365
MS*Lesion	8.81	1	8.81	0.1163	0.734402
Running*Lesion	5.13	1	5.13	0.0677	0.795669
MS*Running*Lesion	0.53	1	0.53	0.007(	0.933431
Error	4089.12	54	75.72		

A5.1.3.1.1.10 Open Field: P49 Full Ten Minutes Frequency of Entry into the inner zone post hoc Newman Keuls test (MS*Running)

Cell No.	Newman-Keuls test; variable In zone Inner zone frequency (Open field 10 minut Approximate Probabilities for Post Hoc Tests Error: Between MS = 75.724, df = 54.000					
	MS	Running	{1} 22.786	{2} 15.529	{3} 17.357	{4} 20.529
1	0	0		0.10835	0.20405(	0.47571(
2	0	1	0.10835		0.56312	0.25785
3	1	0	0.20405(	0.56312		0.31707
4	1	1	0.47571(	0.25785	0.31707	

A5.1.4.1.1.11. Open Field: P49 Full Ten Minutes Latency of Inner Zone entry Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level c Factor	Level of Factor	Level of Factor	N	In zone Inner zone latency Mean	In zone Inner zone latency Std.Dev.	In zone Inner zon latency Std.Err	In zone Inner zone latency -95.00%	In zone Inner zone latency +95.00%
Total				62	76.119	115.922	14.7222	46.680	105.558
MS	0			31	83.980	134.431	24.1446	34.670	133.290
MS	1			31	68.258	95.522	17.1562	33.221	103.296
Running	0			28	72.822	99.698	18.8412	34.163	111.481
Running	1			34	78.834	129.192	22.1563	33.757	123.912
Lesion	0			32	46.729	29.571	5.2276	36.067	57.391
Lesion	1			30	107.468	159.253	29.0756	48.002	166.935
MS*Running	0	0		14	75.156	124.871	33.3733	3.057	147.254
MS*Running	0	1		17	91.247	145.228	35.2231	16.577	165.916
MS*Running	1	0		14	70.489	70.989	18.9727	29.501	111.477
MS*Running	1	1		17	66.422	114.043	27.6595	7.786	125.057
MS*Lesion	0	0		16	48.347	31.180	7.7949	31.732	64.961
MS*Lesion	0	1		15	121.989	186.238	48.0866	18.853	225.124
MS*Lesion	1	0		16	45.112	28.801	7.2003	29.765	60.459
MS*Lesion	1	1		15	92.948	131.902	34.0570	19.903	165.993
Running*Lesion	0	0		14	47.755	32.487	8.6825	28.997	66.512
Running*Lesion	0	1		14	97.890	135.038	36.0904	19.921	175.858
Running*Lesion	1	0		18	45.932	28.036	6.6082	31.989	59.874
Running*Lesion	1	1		16	115.850	181.846	45.4616	18.950	212.749
MS*Running*Les	0	0	0	7	44.492	31.710	11.9855	15.165	73.820
MS*Running*Les	0	0	1	7	105.819	174.886	66.1008	-55.923	267.562
MS*Running*Les	0	1	0	9	51.344	32.335	10.7784	26.489	76.199
MS*Running*Les	0	1	1	8	136.137	206.552	73.0271	-36.544	308.819
MS*Running*Les	1	0	0	7	51.017	35.444	13.3968	18.236	83.798
MS*Running*Les	1	0	1	7	89.961	93.690	35.4116	3.311	176.610
MS*Running*Les	1	1	0	9	40.519	23.640	7.8800	22.348	58.690
MS*Running*Les	1	1	1	8	95.562	165.093	58.3693	-42.459	233.584

A5.1.4.1.1.12. Open Field: P49 Full Ten Minutes Latency of Inner Zone Entry ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone latency (Open field 10 minu Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	362234.4	1	362234.4	26.01073	0.00000
MS	3534.4	1	3534.4	0.25379	0.61646
Running	998.0	1	998.0	0.07166	0.78994
Lesion	55239.7	1	55239.7	3.96656	0.05148
MS*Running	1695.6	1	1695.6	0.12175	0.72849
MS*Lesion	2604.1	1	2604.1	0.18699	0.66715
Running*Lesion	1500.0	1	1500.0	0.10771	0.74404
MS*Running*Lesion	52.0	1	52.0	0.00373	0.95150
Error	752022.6	54	13926.3		

A5.1.4.1.1.13. Open Field: P49 Full Ten minutes Maximum Velocity Descriptive statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level o Factor	Level of Factor	Level of Factor	N	Velocity Maximun (cm/s) Mean	Velocity Maximun (cm/s) Std.Dev.	Velocity Maximum (cm/s) Std.Err	Velocity Maximum (cm/s) -95.00%	Velocity Maximum (cm/s) +95.00%
Total				62	160.279	140.879	17.8917	124.502	196.055
MS	0			31	157.363	160.380	28.8051	98.535	216.191
MS	1			31	163.195	120.897	21.7138	118.849	207.540
Running	0			28	181.714	144.851	27.3743	125.546	237.881
Running	1			34	142.626	137.146	23.5204	94.774	190.479
Lesion	0			32	191.935	177.371	31.3551	127.986	255.884
Lesion	1			30	126.512	76.366	13.9424	97.997	155.028
MS*Running	0	0		14	155.758	138.383	36.9844	75.858	235.658
MS*Running	0	1		17	158.684	180.735	43.8346	65.759	251.610
MS*Running	1	0		14	207.669	151.581	40.5117	120.149	295.190
MS*Running	1	1		17	126.569	74.704	18.1184	88.159	164.978
MS*Lesion	0	0		16	193.013	209.947	52.4869	81.139	304.886
MS*Lesion	0	1		15	119.336	69.928	18.0554	80.611	158.061
MS*Lesion	1	0		16	190.857	144.699	36.1748	113.752	267.962
MS*Lesion	1	1		15	133.688	84.141	21.7251	87.092	180.284
Running*Lesion	0	0		14	225.446	175.068	46.7889	124.365	326.528
Running*Lesion	0	1		14	137.981	93.859	25.0849	83.788	192.174
Running*Lesion	1	0		18	165.870	179.687	42.3528	76.514	255.227
Running*Lesion	1	1		16	116.477	58.391	14.5979	85.362	147.592
MS*Running*Les	0	0	0	7	205.083	174.536	65.9686	43.664	366.502
MS*Running*Les	0	0	1	7	106.433	73.154	27.6496	38.777	174.089
MS*Running*Les	0	1	0	9	183.625	244.074	81.3583	-3.987	371.237
MS*Running*Les	0	1	1	8	130.626	69.862	24.7001	72.220	189.033
MS*Running*Les	1	0	0	7	245.809	187.017	70.6858	72.847	418.771
MS*Running*Les	1	0	1	7	169.529	106.834	40.3795	70.724	268.334
MS*Running*Les	1	1	0	9	148.116	91.266	30.4221	77.963	218.270
MS*Running*Les	1	1	1	8	102.328	44.361	15.6842	65.240	139.415

A5.1.4.1.1.14. Open Field: P49 Full Ten Minutes Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for Velocity Maximum (cm/s) (Open field 1 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	159833	1	159833	79.5942	0.00000
MS	153	1	153	0.0764	0.78328
Running	2519	1	2519	1.2547	0.26761
Lesion	7178	1	7178	3.5749	0.06402
MS*Running	2692	1	2692	1.3407	0.25199
MS*Lesion	838	1	838	0.0417	0.83886
Running*Lesion	555	1	555	0.2766	0.60106
MS*Running*Lesion	22	1	22	0.0109	0.91698
Error	108437	54	2008		

A5.1.4.1.1.15. Open Field: P49 Full Ten Minutes Mean Velocity Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49)								
	Level of Factor	Level of Factor	Level of Factor	N	Velocity Mean (cm/s) Mean	Velocity Mean (cm/s) Std.Dev.	Velocity Mean (cm/s) Std.Err	Velocity Mean (cm/s) -95.00%	Velocity Mean (cm/s) +95.00%
Total				62	12.9028	2.57863	0.32748	12.2480	13.5577
MS	0			31	12.1635	2.68918	0.48299	11.1771	13.1499
MS	1			31	13.6421	2.27133	0.40794	12.8090	14.4753
Running	0			28	14.4615	2.10636	0.39806	13.6448	15.2783
Running	1			34	11.6191	2.21401	0.37970	10.8466	12.3916
Lesion	0			32	13.1461	2.13636	0.37766	12.3758	13.9163
Lesion	1			30	12.6433	2.99546	0.54689	11.5248	13.7619
MS*Running	0	0		14	13.8439	2.20310	0.58880	12.5718	15.1159
MS*Running	0	1		17	10.7796	2.26063	0.54828	9.6173	11.9419
MS*Running	1	0		14	15.0792	1.88134	0.50281	13.9930	16.1655
MS*Running	1	1		17	12.4586	1.87135	0.45387	11.4965	13.4208
MS*Lesion	0	0		16	12.5517	2.16762	0.54190	11.3966	13.7067
MS*Lesion	0	1		15	11.7494	3.17905	0.82082	9.9889	13.5099
MS*Lesion	1	0		16	13.7404	1.99502	0.49875	12.6773	14.8035
MS*Lesion	1	1		15	13.5373	2.60147	0.67169	12.0966	14.9779
Running*Lesion	0	0		14	14.5836	1.85545	0.49589	13.5123	15.6550
Running*Lesion	0	1		14	14.3394	2.39584	0.64031	12.9561	15.7228
Running*Lesion	1	0		18	12.0279	1.63226	0.38472	11.2162	12.8396
Running*Lesion	1	1		16	11.1593	2.70894	0.67723	9.7158	12.6027
MS*Running*Lesio	0	0	0	7	14.1773	1.94997	0.73702	12.3739	15.9808
MS*Running*Lesio	0	0	1	7	13.5104	2.54054	0.96023	11.1608	15.8600
MS*Running*Lesio	0	1	0	9	11.2873	1.35910	0.45303	10.2426	12.3320
MS*Running*Lesio	0	1	1	8	10.2085	2.97756	1.05272	7.7192	12.6978
MS*Running*Lesio	1	0	0	7	14.9900	1.80874	0.68364	13.3172	16.6628
MS*Running*Lesio	1	0	1	7	15.1685	2.09253	0.79090	13.2332	17.1037
MS*Running*Lesio	1	1	0	9	12.7685	1.60632	0.53544	11.5338	14.0033
MS*Running*Lesio	1	1	1	8	12.1100	2.18934	0.77404	10.2796	13.9403

A5.1.4.1.1.16. Open Field: P49 Full Ten Minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for Velocity Mean (cm/s) (Open field 10 minute Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	10407.69	1	10407.69	2356.702	0.000000
MS	32.83	1	32.83	7.434	0.008613
Running	126.10	1	126.10	28.554	0.000002
Lesion	4.75	1	4.75	1.075	0.304471
MS*Running	0.80	1	0.80	0.180	0.672669
MS*Lesion	1.53	1	1.53	0.348	0.557966
Running*Lesion	1.49	1	1.49	0.338	0.563159
MS*Running*Lesion	0.17	1	0.17	0.039	0.843735
Error	238.48	54	4.42		

A5.1.4.1.1.17. Open Field: P49 Full Ten Minutes Mean Velocity post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable Velocity Mean (cm/s) (Open field 10 minutes
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 4.4162, df = 54.000

Cell No.	MS	{1} 12.164	{2} 13.642
1	0		0.007792
2	1	0.007792	

A5.1.4.1.1.18. Open Field: P49 Full Ten Minutes Mean Velocity post hoc Newman Keuls test (running effect)

Newman-Keuls test; variable Velocity Mean (cm/s) (Open field 10 minutes
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 4.4162, df = 54.000

Cell No.	Running	{1} 14.462	{2} 11.619
1	0		0.000114
2	1	0.000114	

1. Open Field: P49 5min Time-bins Data spreadsheet

	P49						
	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Zon frequency
164	1	1	0	2786.90139	249	10.999996	5
129	1	1	1	3762.29281	249	4.666666	5
148	1	0	0	4382.55236	249	11.833329	6
141	1	0	1	4267.18757	249	1.333432	5
207	0	1	1	353.321107	249	0	0
176	0	0	0	2997.68845	249	13.499995	5
174	0	1	0	2527.36691	249	4.999998	4
227	0	0	1	2242.41552	249	0	0
122	1	1	0	3877.70851	249	13.666661	8
135	1	0	1	4528.61591	249	3.999998	1
197	1	0	0	4668.58198	249	3.999998	1
195	1	1	1	3049.77008	249	14.999994	7
154	1	0	1	3591.14008	249	0	0
203	0	1	1	3310.93132	249	21.666658	9
193	0	0	1	4447.77235	249	46.833314	20
167	0	0	0	4579.13876	249	24.000089	15
222	0	1	0	3517.80964	249	24.333324	13
182	1	1	1	4734.70157	249	19.66666	11
209	1	0	1	4170.35285	249	21.333325	11
144	1	0	0	4231.92379	249	25.166655	12
216	1	1	0	4014.77061	249	27.999988	15
188	0	1	1	3805.90092	249	17.833326	9
169	0	0	0	4557.79821	249	36.999986	18
234	0	0	1	4239.82698	249	24.833324	11
117	0	0	1	3653.28134	249	18.166661	10
126	0	0	1	4024.50004	249	9.166763	8
138	1	1	0	3423.38526	249	21.49999	14
157	1	0	1	4036.31544	249	8.666663	3
131	0	1	0	3511.95207	249	7.333331	5
191	0	1	1	3635.40628	249	13.666661	7
160	0	0	0	3516.69537	249	12.666662	7
190	1	0	0	4038.38945	249	9.83199747	5
143	1	0	1	3962.83053	249	9.43205181	5
196	1	1	0	3546.40304	249	4.49938867	5
145	1	1	1	1613.15232	249	0	0
198	1	1	0	4202.87268	249	15.6317075	18
139	1	0	0	3972.16962	249	7.89892678	6
210	0	1	1	3339.06626	249	11.798397	9
232	0	1	0	3249.31	249	6.73241861	6
171	0	0	0	3510.59572	249	3.06625006	3
219	0	0	0	3715.33605	249	14.2313997	5
205	0	0	1	3342.00443	249	6.83240502	4
137	0	1	1	3199.26547	249	0	0
250	1	0	0	3951.18324	249	30.500088	13

	P49						
	1 MS	2 Running	3 Lesion	4 1. Inner zone latency (s)	5 1. Outer zone duration (s)	6 1. Outer zone frequency	7 1. Velocity max (cm/s)
164	1	1	0	52.333312	238.000004	6	61.3780915
129	1	1	1	5.833331	244.333334	6	67.2935238
148	1	0	0	37.499985	237.166671	7	82.6313024
141	1	0	1	20.166658	247.666568	5	84.2187226
207	0	1	1	249	249	1	16.6092816
176	0	0	0	85.499965	235.500005	6	76.0146609
174	0	1	0	106.33329	244.000002	5	73.9200162
227	0	0	1	249	249	1	61.0181235
122	1	1	0	36.666652	235.333339	9	75.2234486
135	1	0	1	57.83331	245.000002	2	88.8928752
197	1	0	0	71.166638	245.000002	2	83.5018552
195	1	1	1	75.833303	234.000006	8	78.7503906
154	1	0	1	249	249	1	79.9056142
203	0	1	1	41.16665	227.333342	10	70.5258872
193	0	0	1	6.666664	202.166686	21	74.3075294
167	0	0	0	35.166652	224.999911	15	84.8799829
222	0	1	0	7.499997	224.666676	14	75.0427823
182	1	1	1	17.833326	229.33334	12	73.205867
209	1	0	1	47.166647	227.666675	12	77.1975603
144	1	0	0	51.833312	223.833345	13	85.2111803
216	1	1	0	34.999986	221.000012	16	83.8430971
188	0	1	1	30.333321	231.166674	10	75.033937
169	0	0	0	34.499986	212.000014	19	81.2060016
234	0	0	1	46.999981	224.166676	12	79.7208037
117	0	0	1	45.999981	230.833339	11	82.7339335
126	0	0	1	64.499974	239.833237	8	78.5599962
138	1	1	0	53.333312	227.50001	15	81.2186053
157	1	0	1	106.166624	240.333337	4	72.8919358
131	0	1	0	78.499968	241.666669	6	88.504199
191	0	1	1	62.666641	235.333339	8	78.1564589
160	0	0	0	24.333323	236.333338	8	79.1416896
190	1	0	0	24.4633429	239.168003	6	304.001971
143	1	0	1	67.0242268	239.567948	6	307.634582
196	1	1	0	78.6559798	244.500611	6	278.811499
145	1	1	1	249	249	1	64.4538707
198	1	1	0	25.129919	233.368292	18	270.89951
139	1	0	0	28.6294435	241.101073	7	301.253961
210	0	1	1	0.59991849	237.201603	10	245.751122
232	0	1	0	7.09903546	242.267581	7	304.946627
171	0	0	0	92.120817	245.93375	4	139.378654
219	0	0	0	31.5957071	234.7686	6	267.345223
205	0	0	1	7.73228276	242.167595	5	271.994899
137	0	1	1	_	249	1	89.845027
250	1	0	0	22.333324	218.499912	13	89.9627891

	P49							
	1 MS	2 Running	3 Lesion	4 1. Velocity mean (cm/s)	5 2. Distance moved (cm	6 2. Arena duration (s)	7 2. Inner zone duration (s)	8 2. Inner Zone frequency
164	1	1	0	11.1923793	2415.5561	249	17.333327	15
129	1	1	1	15.1096156	2674.3778	249	18.999993	10
148	1	0	0	17.600619	3142.8005	249	19.833324	12
141	1	0	1	17.1373059	3596.8770	249	25.166558	11
207	0	1	1	1.41896085	2045.6130	249	0.666667	1
176	0	0	0	12.0389142	2243.1750	249	21.333522	13
174	0	1	0	10.1500722	2558.9201	249	20.833326	10
227	0	0	1	9.00568852	2141.4969	249	0	0
122	1	1	0	15.5731324	1560.0147	249	7.666663	3
135	1	0	1	18.1872197	4914.3987	249	17.499995	8
197	1	0	0	18.749333	4041.5589	249	24.166657	13
195	1	1	1	12.2480776	2576.2172	249	29.833322	9
154	1	0	1	14.4222548	3281.8991	249	6.333332	3
203	0	1	1	13.2969182	1471.5275	249	17.999991	10
193	0	0	1	17.8625459	3481.0125	249	60.166841	20
167	0	0	0	18.3901235	3775.1241	249	31.499886	16
222	0	1	0	14.1277556	2595.4602	249	18.499993	10
182	1	1	1	19.0148737	3422.8881	249	45.666648	21
209	1	0	1	16.7484119	3495.8985	249	32.833321	16
144	1	0	0	16.9956851	2833.6491	249	30.166654	16
216	1	1	0	16.1235827	2511.8526	249	20.499995	9
188	0	1	1	15.284749	2144.2052	249	13.333328	7
169	0	0	0	18.3044185	2985.3772	249	35.999984	20
234	0	0	1	17.0274245	3319.7581	249	38.166654	20
117	0	0	1	14.671819	2063.1096	249	36.33332	15
126	0	0	1	16.1626571	2825.1558	249	21.666557	10
138	1	1	0	13.7485395	2942.9146	249	45.333315	18
157	1	0	1	16.2101091	3662.9254	249	27.166656	12
131	0	1	0	14.1042309	2682.5757	249	15.999995	9
191	0	1	1	14.6000312	2507.7236	249	25.666656	13
160	0	0	0	14.1232802	3001.8817	249	26.333327	15
190	1	0	0	16.7568362	3546.9179	249	12.664945	9
143	1	0	1	16.4433131	3058.6468	249	26.264094	16
196	1	1	0	14.7153948	2966.9513	249	26.829688	13
145	1	1	1	6.6935915	2877.2370	249	0	0
198	1	1	0	17.4393406	3458.0080	249	18.796948	14
139	1	0	0	16.4820646	4059.7869	249	30.629171	11
210	0	1	1	13.8550744	2380.0029	249	23.930082	9
232	0	1	0	13.4826411	3138.5476	249	17.398632	15
171	0	0	0	14.5668164	3379.9403	249	8.3331972	10
219	0	0	0	15.416363	3400.5570	249	40.527826	20
205	0	0	1	13.867266	3451.7672	249	7.5323099	4
137	0	1	1	13.274987	2177.1120	249	0	0
250	1	0	0	15.8682124	2473.1474	249	41.333215	17

	P49							
	1 MS	2 Running	3 Lesion	4 2. Inner zone latenc	5 2. Outer zone duratio (s)	6 2. Outer zone frequency	7 2. Velocity max (cm/s)	8 2. Velocity mean (cm/s)
164	1	1	0	260.166562	231.666673	16	69.7784857	9.70103226
129	1	1	1	260.999895	230.000007	11	72.1750635	10.740477
148	1	0	0	253.166565	229.166676	13	165.388693	12.6216947
141	1	0	1	249	223.833442	11	140.856809	14.4452945
207	0	1	1	437.999824	248.333333	2	71.8266706	8.21531647
176	0	0	0	285.833219	227.666478	13	179.882142	9.00873848
174	0	1	0	249.9999	228.166674	11	82.9095302	10.2767916
227	0	0	1	249	249	1	72.6731437	8.60039359
122	1	1	0	261.166562	241.333337	4	64.4574407	6.26512179
135	1	0	1	282.666553	231.500005	9	116.207611	19.7365492
197	1	0	0	317.833206	224.833343	14	454.082812	16.2311662
195	1	1	1	260.166562	219.166678	10	79.1377047	10.3462587
154	1	0	1	293.499882	242.666668	4	87.5328185	13.1803231
203	0	1	1	250.166566	231.000009	11	89.4455896	5.90975184
193	0	0	1	250.166566	188.833159	20	85.7846248	13.9799744
167	0	0	0	249	217.500114	16	95.0757081	15.161147
222	0	1	0	249.333233	230.500007	11	79.0140764	10.4235397
182	1	1	1	257.499897	203.333352	22	101.079053	13.7465434
209	1	0	1	249.9999	216.166679	17	88.4246855	14.0397585
144	1	0	0	249.333233	218.833346	17	82.0229045	11.3801219
216	1	1	0	255.166564	228.500005	10	83.2395456	10.0877661
188	0	1	1	308.666543	235.666672	8	79.3952785	8.61126951
169	0	0	0	253.166565	213.000016	21	80.4782618	11.9894728
234	0	0	1	252.833232	210.833346	21	73.1868627	13.332367
117	0	0	1	258.999896	212.66668	16	62.1045249	8.285584
126	0	0	1	249	227.333443	10	77.0722563	11.3460114
138	1	1	0	254.499898	203.666685	19	130.69457	11.818939
157	1	0	1	313.166541	221.833344	13	338.605486	14.7105509
131	0	1	0	294.833215	233.000005	10	73.9502751	10.7734002
191	0	1	1	251.166566	223.333344	14	98.3567547	10.0711841
160	0	0	0	257.166563	222.666673	16	82.0492565	12.0557551
190	1	0	0	271.163157	236.335054	10	295.277194	14.7175314
143	1	0	1	253.865508	222.735906	16	303.293899	12.6915061
196	1	1	0	263.83082	222.170312	14	268.173208	12.3110262
145	1	1	1	249	249	1	98.1308425	11.9387666
198	1	1	0	249	230.203052	14	316.622777	14.3486097
139	1	0	0	254.63207	218.370828	12	291.541779	16.8456226
210	0	1	1	283.128198	225.069918	10	263.617795	9.87555055
232	0	1	0	274.096092	231.601368	15	829.53786	13.0230451
171	0	0	0	267.397002	240.666803	10	559.585927	14.0246766
219	0	0	0	279.395372	208.472173	21	301.065711	14.1102235
205	0	0	1	278.362179	241.46769	5	266.452593	14.3227142
137	0	1	1	_	249	1	77.0292326	9.03367809
250	1	0	0	249	207.666785	17	79.2014146	9.93232273

	P49						
	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Zo frequency
271	1	1	0	4106.61078	249	34.999985	20
301	0	1	1	3185.57902	249	13.66666	7
305	0	1	0	2996.3823	249	4.999997	6
309	1	0	1	3686.57462	249	15.666659	9
306	1	1	1	4020.26232	249	29.49999	15
322	0	0	1	4136.06791	249	28.999987	10
323	0	1	0	3666.26349	249	20.999992	15
324	0	1	0	3352.56808	249	14.500093	8
186	1	0	1	3957.83656	249	9.333329	5
220	1	1	1	3096.12603	249	8.499996	7
312	0	1	1	3542.94234	249	14.499994	14
313	0	1	0	2977.40213	249	18.999991	7
315	0	0	0	4139.51869	249	19.166656	13
314	0	1	0	3025.00922	249	25.166656	9
317	1	1	1	4095.97323	249	11.333329	7
319	1	1	0	4019.90514	249	22.999992	19
318	1	1	0	2785.79616	249	4.166666	2
320	1	1	1	3478.39137	249	14.833329	10

	P49						
	1 MS	2 Running	3 Lesion	4 1. Inner zone latency (s)	5 1. Outer zone duration (s)	6 1. Outer zone frequency	7 1. Velocity max (cm/s)
271	1	1	0	9.166663	214.000015	21	160.298797
301	0	1	1	12.833328	235.33334	8	72.4904291
305	0	1	0	65.16664	244.000003	7	75.6081747
309	1	0	1	37.833318	233.333341	10	107.442587
306	1	1	1	29.666654	219.50001	16	101.389101
322	0	0	1	70.499971	220.000013	11	73.5655169
323	0	1	0	39.66665	228.000008	16	77.1905394
324	0	1	0	62.833308	234.499907	8	89.118959
186	1	0	1	121.166618	239.666671	6	83.4506128
220	1	1	1	81.666634	240.500004	8	70.3563923
312	0	1	1	5.166664	234.500006	15	78.7701553
313	0	1	0	58.33331	230.000009	8	70.1387022
315	0	0	0	8.166663	229.833344	14	76.6303509
314	0	1	0	36.666652	223.833344	10	64.2866551
317	1	1	1	40.499983	237.666671	8	78.6453266
319	1	1	0	10.499995	226.000008	20	73.4223287
318	1	1	0	63.833307	244.833334	3	99.353703
320	1	1	1	14.833327	234.166671	11	79.1663206

	P49							
	1 MS	2 Running	3 Lesion	4 1. Velocity mean (cm/s)	5 2. Distance moved (cm	6 2. Arena duration (s)	7 2. Inner zone duration (s)	8 2. Inner Zone frequency
271	1	1	0	16.4924198	2502.7144	249	26.833324	14
301	0	1	1	12.7934948	132.82280	249	0	0
305	0	1	0	12.0336694	2070.4354	249	13.166661	5
309	1	0	1	14.8055265	2376.6626	249	16.333328	7
306	1	1	1	16.1456378	2478.4793	249	24.499989	11
322	0	0	1	16.6107217	3504.0269	249	30.500187	17
323	0	1	0	14.723955	2610.2393	249	15.833328	9
324	0	1	0	13.4641341	2076.8078	249	24.999893	11
186	1	0	1	15.8949325	2456.5580	249	15.499991	10
220	1	1	1	12.4342453	1832.6261	249	15.66666	6
312	0	1	1	14.22869	3006.8883	249	39.999986	11
313	0	1	0	11.9574433	2011.2922	249	15.66666	6
315	0	0	0	16.6245795	3162.4113	249	36.500185	12
314	0	1	0	12.1486359	1777.3323	249	22.666659	9
317	1	1	1	16.4496985	2048.0279	249	17.166859	8
319	1	1	0	16.1442039	2554.2621	249	15.833328	7
318	1	1	0	11.1879409	3077.5843	249	16.333326	12
320	1	1	1	13.9694485	2362.3856	249	22.666657	11

	P49							
	1 MS	2 Running	3 Lesion	4 2. Inner zone latenc (s)	5 2. Outer zone duratio (s)	6 2. Outer zone frequency	7 2. Velocity max (cm/s)	8 2. Velocity mean (cm/
271	1	1	0	257.666563	222.166676	15	65.1327428	10.0510659
301	0	1	1	-	249	1	10.2375634	0.53342516
305	0	1	0	261.166562	235.833339	6	72.0875632	8.31500597
309	1	0	1	362.499855	232.666672	8	70.7853346	9.54483336
306	1	1	1	261.166562	224.500011	12	95.9598324	9.95373532
322	0	0	1	264.66656	218.499813	17	70.649137	14.0724042
323	0	1	0	267.666559	233.166672	10	84.6541114	10.4828934
324	0	1	0	249	224.000107	11	141.827915	8.34059725
186	1	0	1	266.999893	233.500009	11	90.5433919	9.8656993
220	1	1	1	369.666518	233.33334	7	80.2024628	7.3599479
312	0	1	1	261.833228	209.000014	12	111.111375	12.0758618
313	0	1	0	272.333224	233.33334	7	127.207144	8.07748259
315	0	0	0	252.666565	212.499815	12	136.719979	12.7004518
314	0	1	0	259.999896	226.333341	10	78.9671771	7.13788375
317	1	1	1	252.333232	231.833141	8	208.336453	8.22501585
319	1	1	0	267.499893	233.166672	8	76.8742338	10.2580852
318	1	1	0	249.333233	232.666674	13	140.903265	12.3597813
320	1	1	1	257.83323	226.333343	12	76.6632231	9.48749615

A5.1.4.1.2.1.1. Open Field: P49 5 min time-bins first 5 minutes Descriptive Statistics

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total				62	3618.70	734.51	93.282	3432.17	3805.23
MS	0			31	3429.00	788.83	141.679	3139.65	3718.35
MS	1			31	3808.40	632.73	113.643	3576.31	4040.49
Running	0			28	3948.15	522.47	98.738	3745.56	4150.74
Running	1			34	3347.39	778.45	133.504	3075.78	3619.01
Lesion	0			31	3672.58	572.78	102.875	3462.48	3882.67
Lesion	1			31	3564.83	873.45	156.876	3244.44	3885.21
MS*Running	0	0		14	3793.04	653.07	174.541	3415.97	4170.11
MS*Running	0	1		17	3129.20	780.22	189.232	2728.05	3530.35
MS*Running	1	0		14	4103.26	297.71	79.566	3931.36	4275.15
MS*Running	1	1		17	3565.59	734.80	178.217	3187.78	3943.39
MS*Lesion	0	0		16	3490.05	565.74	141.436	3188.58	3791.51
MS*Lesion	0	1		15	3363.88	990.80	255.824	2815.19	3912.57
MS*Lesion	1	0		15	3867.27	530.48	136.970	3573.50	4161.04
MS*Lesion	1	1		16	3753.22	728.93	182.234	3364.79	4141.64
Running*Lesion	0	0		13	4020.12	489.15	135.667	3724.52	4315.71
Running*Lesion	0	1		15	3885.78	558.91	144.311	3576.26	4195.30
Running*Lesion	1	0		18	3421.57	500.99	118.085	3172.44	3670.71
Running*Lesion	1	1		16	3263.94	1017.19	254.299	2721.91	3805.96
MS*Running*Lesi	0	0	0	7	3859.53	589.72	222.895	3314.13	4404.94
MS*Running*Lesi	0	0	1	7	3726.55	752.32	284.353	3030.76	4422.34
MS*Running*Lesi	0	1	0	9	3202.67	356.27	118.756	2928.82	3476.52
MS*Running*Lesi	0	1	1	8	3046.55	1109.78	392.368	2118.74	3974.35
MS*Running*Lesi	1	0	0	6	4207.46	280.54	114.530	3913.05	4501.87
MS*Running*Lesi	1	0	1	8	4025.10	303.47	107.294	3771.39	4278.81
MS*Running*Lesi	1	1	0	9	3640.48	546.46	182.153	3220.43	4060.53
MS*Running*Lesi	1	1	1	8	3481.33	936.77	331.200	2698.17	4264.49

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s) -95.00%	1. Inner zone duration (s) +95.00%
Total				62	14.4939	10.0932	1.28184	11.9307	17.0571
MS	0			31	15.4729	10.7305	1.92725	11.5369	19.4089
MS	1			31	13.5148	9.4877	1.70405	10.0347	16.9950
Running	0			28	14.9092	11.5517	2.18308	10.4299	19.3886
Running	1			34	14.1518	8.8805	1.52299	11.0532	17.2503
Lesion	0			31	16.0449	9.5601	1.71705	12.5382	19.5516
Lesion	1			31	12.9428	10.5249	1.89033	9.0823	16.8034
MS*Running	0	0		14	18.4616	13.0298	3.48238	10.9384	25.9849
MS*Running	0	1		17	13.0116	7.9811	1.93570	8.9081	17.1151
MS*Running	1	0		14	11.3568	8.9550	2.39335	6.1863	16.5274
MS*Running	1	1		17	15.2920	9.8079	2.37877	10.2492	20.3347
MS*Lesion	0	0		16	15.7310	9.2892	2.32232	10.7811	20.6809
MS*Lesion	0	1		15	15.1976	12.4147	3.20547	8.3225	22.0726
MS*Lesion	1	0		15	16.3796	10.1568	2.62249	10.7550	22.0043
MS*Lesion	1	1		16	10.8290	8.2370	2.05926	6.4398	15.2183
Running*Lesion	0	0		13	16.3740	10.2481	2.84232	10.1811	22.5669
Running*Lesion	0	1		15	13.6398	12.7912	3.30268	6.5563	20.7234
Running*Lesion	1	0		18	15.8072	9.3279	2.19861	11.1685	20.4459
Running*Lesion	1	1		16	12.2894	8.2401	2.06004	7.8986	16.6803
MS*Running*Lesi	0	0	0	7	17.6615	10.6729	4.03400	7.7907	27.5324
MS*Running*Lesi	0	0	1	7	19.2617	15.8885	6.00531	4.5673	33.9562
MS*Running*Lesi	0	1	0	9	14.2295	8.4002	2.80007	7.7725	20.6865
MS*Running*Lesi	0	1	1	8	11.6414	7.8037	2.75904	5.1173	18.1655
MS*Running*Lesi	1	0	0	6	14.8718	10.5040	4.28826	3.8485	25.8951
MS*Running*Lesi	1	0	1	8	8.7206	7.1824	2.53939	2.7159	14.7253
MS*Running*Lesi	1	1	0	9	17.3849	10.4274	3.47582	9.3696	25.4002
MS*Running*Lesi	1	1	1	8	12.9375	9.1456	3.23346	5.2915	20.5834

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total				62	8.1774	5.21512	0.66232	6.85302	9.5018
MS	0			31	8.2903	4.94768	0.88863	6.47549	10.1051
MS	1			31	8.0645	5.54938	0.99669	6.02898	10.1000
Running	0			28	7.5357	5.21736	0.98598	5.51263	9.5588
Running	1			34	8.7058	5.23119	0.89714	6.88063	10.5311
Lesion	0			31	9.2903	5.43564	0.97627	7.29651	11.2841
Lesion	1			31	7.0645	4.81619	0.86501	5.29792	8.8311
MS*Running	0	0		14	9.2142	5.80687	1.55195	5.86149	12.5670
MS*Running	0	1		17	7.5294	4.14001	1.00410	5.40081	9.6580
MS*Running	1	0		14	5.8571	4.09234	1.09372	3.49429	8.2199
MS*Running	1	1		17	9.8823	6.02995	1.46247	6.78203	12.9826
MS*Lesion	0	0		16	8.6875	4.61474	1.15368	6.22847	11.1465
MS*Lesion	0	1		15	7.8666	5.40986	1.39682	4.87078	10.8625
MS*Lesion	1	0		15	9.9333	6.29587	1.62558	6.44679	13.4198
MS*Lesion	1	1		16	6.3125	4.22246	1.05561	4.06251	8.5624
Running*Lesion	0	0		13	8.3846	5.18874	1.43909	5.24908	11.5201
Running*Lesion	0	1		15	6.8000	5.30767	1.37043	3.86070	9.7392
Running*Lesion	1	0		18	9.9444	5.66176	1.33449	7.12891	12.7599
Running*Lesion	1	1		16	7.3125	4.46794	1.11698	4.93170	9.6933
MS*Running*Les	0	0	0	7	9.4285	5.82686	2.20234	4.03961	14.8175
MS*Running*Les	0	0	1	7	9.0000	6.24499	2.36038	3.22434	14.7756
MS*Running*Les	0	1	0	9	8.1111	3.68932	1.22977	5.27524	10.9469
MS*Running*Les	0	1	1	8	6.8750	4.76407	1.68435	2.89213	10.8578
MS*Running*Les	1	0	0	6	7.1666	4.53504	1.85142	2.40742	11.9259
MS*Running*Les	1	0	1	8	4.8750	3.72011	1.31526	1.76490	7.9851
MS*Running*Les	1	1	0	9	11.7777	6.85160	2.28386	6.51117	17.0443
MS*Running*Les	1	1	1	8	7.7500	4.43202	1.56695	4.04473	11.4552

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total				62	109.973	74.599	9.4742	91.0284	128.918
MS	0			31	102.336	69.154	12.4205	76.9705	127.702
MS	1			31	117.609	80.080	14.3829	88.2360	146.983
Running	0			28	120.524	82.105	15.5163	88.6878	152.361
Running	1			34	101.283	67.817	11.6306	77.6210	124.946
Lesion	0			31	124.334	83.950	15.0779	93.5410	155.127
Lesion	1			31	95.612	61.982	11.1324	72.8767	118.347
MS*Running	0	0		14	109.035	70.263	18.7786	68.4666	149.604
MS*Running	0	1		17	96.819	69.885	16.9497	60.8879	132.751
MS*Running	1	0		14	132.014	93.700	25.0424	77.9130	186.115
MS*Running	1	1		17	105.747	67.525	16.3772	71.0294	140.465
MS*Lesion	0	0		16	107.709	71.917	17.9793	69.3875	146.031
MS*Lesion	0	1		15	96.605	68.104	17.5843	58.8908	134.320
MS*Lesion	1	0		15	142.067	94.381	24.3692	89.8006	194.334
MS*Lesion	1	1		16	94.681	57.904	14.4760	63.8260	125.535
Running*Lesion	0	0		13	134.704	90.852	25.1978	79.8031	189.606
Running*Lesion	0	1		15	108.235	74.682	19.2829	66.8778	149.593
Running*Lesion	1	0		18	116.844	80.430	18.9576	76.8476	156.841
Running*Lesion	1	1		16	83.777	46.576	11.6440	58.9590	108.596
MS*Running*Lesi	0	0	0	7	114.942	70.864	26.7842	49.4037	180.480
MS*Running*Lesi	0	0	1	7	103.128	74.790	28.2679	33.9595	172.297
MS*Running*Lesi	0	1	0	9	102.084	76.485	25.4950	43.2922	160.875
MS*Running*Lesi	0	1	1	8	90.897	66.348	23.4575	35.4294	146.366
MS*Running*Lesi	1	0	0	6	157.760	112.245	45.8241	39.9657	275.555
MS*Running*Lesi	1	0	1	8	112.704	79.445	28.0882	46.2861	179.122
MS*Running*Lesi	1	1	0	9	131.605	86.061	28.6870	65.4530	197.757
MS*Running*Lesi	1	1	1	8	76.657	11.430	4.0411	67.1019	86.213

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total				62	14.6226	2.95289	0.37501	13.8727	15.3725
MS	0			31	13.8586	3.17009	0.56936	12.6958	15.0214
MS	1			31	15.3865	2.54444	0.45699	14.4532	16.3198
Running	0			28	15.9633	2.07167	0.39151	15.1600	16.7666
Running	1			34	13.5184	3.13451	0.53756	12.4247	14.6121
Lesion	0			31	14.8621	2.33069	0.41860	14.0072	15.7170
Lesion	1			31	14.3830	3.48986	0.62679	13.1029	15.6631
MS*Running	0	0		14	15.3337	2.58639	0.69124	13.8404	16.8271
MS*Running	0	1		17	12.6438	3.15209	0.76449	11.0231	14.2645
MS*Running	1	0		14	16.5929	1.17070	0.31288	15.9170	17.2689
MS*Running	1	1		17	14.3930	2.95013	0.71551	12.8762	15.9098
MS*Lesion	0	0		16	14.1035	2.28182	0.57045	12.8876	15.3194
MS*Lesion	0	1		15	13.5974	3.97672	1.02678	11.3951	15.7996
MS*Lesion	1	0		15	15.6713	2.16852	0.55991	14.4704	16.8722
MS*Lesion	1	1		16	15.1196	2.89867	0.72466	13.5750	16.6642
Running*Lesion	0	0		13	16.3013	1.90994	0.52972	15.1471	17.4554
Running*Lesion	0	1		15	15.6704	2.22540	0.57459	14.4380	16.9028
Running*Lesion	1	0		18	13.8227	2.06962	0.48781	12.7935	14.8519
Running*Lesion	1	1		16	13.1761	4.06507	1.01626	11.0100	15.3422
MS*Running*Les	0	0	0	7	15.6377	2.31306	0.87425	13.4985	17.7770
MS*Running*Les	0	0	1	7	15.0297	2.98795	1.12934	12.2663	17.7931
MS*Running*Les	0	1	0	9	12.9102	1.44510	0.48170	11.7994	14.0210
MS*Running*Les	0	1	1	8	12.3441	4.48659	1.58624	8.5932	16.0950
MS*Running*Les	1	0	0	6	17.0754	0.99950	0.40804	16.0265	18.1243
MS*Running*Les	1	0	1	8	16.2311	1.21760	0.43048	15.2131	17.2490
MS*Running*Les	1	1	0	9	14.7352	2.26726	0.75575	12.9924	16.4779
MS*Running*Les	1	1	1	8	14.0081	3.70115	1.30855	10.9139	17.1023

A5.1.4.1.2.1.2. Open Field P49 5 min time-bins First Five minutes Distance moved ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P49 Open fie Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	81177253	1	81177253	1775.48	0.00000
MS	219853	1	219853	4.809	0.03264
Running	570773	1	570773	12.484	0.00085
Lesion	37888	1	37888	0.829	0.36669
MS*Running	4871	1	4871	0.107	0.74538
MS*Lesion	261	1	261	0.006	0.93998
Running*Lesion	0	1	0	0.000	1.00000
MS*Running*Lesion	204	1	204	0.004	0.94690
Error	2468944	54	45721		

A5.1.4.1.2.1.3. Open Field P49 5 min time-bins First five minutes Distance moved post hoc test (MS effect)

Cell No.	Newman-Keuls test; variable 1. Distance moved (cm) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 4572E2, df = 54.000 MS	{1} 3429.0	{2} 3808.4
1	0		0.03152
2	1	0.03152	

A5.1.4.1.2.1.4. Open Field P49 5 min time-bins First five minutes Distance moved post hoc tests (running effect)

Cell No.	Newman-Keuls test; variable 1. Distance moved (cm) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 4572E2, df = 54.000 Running	{1} 3948.2	{2} 3347.4
1	0		0.00111
2	1	0.00111	

A5.1.4.1.2.1.5. Open Field P49 5 min time-bins First five minutes Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 1. Inner zone duration (s) (P49 Open field 5 mir Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	12977.3	1	12977.3	126.104	0.00000
MS	75.12	1	75.12	0.729	0.39667
Running	17.80	1	17.80	0.173	0.67913
Lesion	127.90	1	127.90	1.242	0.26985
MS*Running	301.27	1	301.27	2.927	0.09282
MS*Lesion	88.00	1	88.00	0.855	0.35921
Running*Lesion	5.88	1	5.88	0.057	0.81196
MS*Running*Lesion	33.07	1	33.07	0.321	0.57311

A5.1.4.1.2.1.6. Open Field P49 5 min time-bins First five minutes Inner Zone Frequency ANOVA

Effect	Univariate Tests of Significance for 1. Inner Zone frequency (P49 Open field 5 mir Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	4023.36	1	4023.36	153.190	0.00000
MS	3.244	1	3.244	0.123	0.72662
Running	15.578	1	15.578	0.593	0.44455
Lesion	60.734	1	60.734	2.312	0.13417
MS*Running	113.789	1	113.789	4.332	0.04214
MS*Lesion	20.643	1	20.643	0.786	0.37924
Running*Lesion	6.164	1	6.164	0.234	0.63001
MS*Running*Lesion	0.821	1	0.821	0.031	0.86028
Error	1418.24	54	26.264		

A5.1.4.1.2.1.7. Open Field P49 5 min time-bins First five minutes Inner Zone Frequency post hoc Newman Keuls test (MS*Running)

Cell No.	Newman-Keuls test; variable 1. Inner Zone frequency (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 26.264, df = 54.000					
	MS	Running	{1} 9.2143	{2} 7.5294	{3} 5.8571	{4} 9.8824
1	0	0		0.36649	0.17440	0.71948
2	0	1	0.36649		0.37007	0.41696
3	1	0	0.17440	0.37007		0.14303
4	1	1	0.71948	0.41696	0.14303	

A5.1.4.1.2.1.8. Open Field P49 5 min time-bins First five minutes Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity max (cm/s) (P49 Open field 5 min Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	754294.4	1	754294.4	131.968	0.000000
MS	4363.5	1	4363.5	0.7634	0.386132
Running	7259.6	1	7259.6	1.2701	0.264725
Lesion	14415.0	1	14415.0	2.5220	0.118108
MS*Running	1312.3	1	1312.3	0.2296	0.633760
MS*Lesion	5649.4	1	5649.4	0.9884	0.324565
Running*Lesion	81.8	1	81.8	0.0143	0.905237
MS*Running*Lesion	105.4	1	105.4	0.0184	0.892477
Error	308649.5	54	5715.7		

A5.1.4.1.2.1.9. Open Field P49 5 min time-bins First Five minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity mean (cm/s) (P49 Open field 5 mir Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	13259.64	1	13259.64	1809.648	0.000000
MS	35.78	1	35.78	4.883	0.031383
Running	94.82	1	94.82	12.941	0.000697
Lesion	7.18	1	7.18	0.980	0.326565
MS*Running	0.69	1	0.69	0.094	0.760426
MS*Lesion	0.15	1	0.15	0.021	0.886653
Running*Lesion	0.02	1	0.02	0.003	0.954450
MS*Running*Lesion	0.01	1	0.01	0.001	0.978417
Error	395.67	54	7.33		

A5.1.4.1.2.1.10. Open Field P49 5 min time-bins First Five minutes Mean Velocity Post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 1. Velocity mean (cm/s) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 7.3272, df = 54.000		
	MS	{1} 13.859	{2} 15.387
1	0		0.030573
2	1	0.030573	

A5.1.4.1.2.1.11. Open Field P49 5 min time-bins First Five minutes Mean Velocity Post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 1. Velocity mean (cm/s) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 7.3272, df = 54.000		
Cell No.	Running	{1} 15.963	{2} 13.518
1	0		0.00095
2	1	0.00095	

A5.1.4.1.2.2.1. Open Field P49 Five min time-bins Second Five minutes Descriptive Statistics

	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
Effect	Level o Factor	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total				62	2763.32	744.871	94.598	2574.16	2952.48
MS	0			31	2584.59	750.901	134.865	2309.15	2860.02
MS	1			31	2942.05	705.895	126.782	2683.13	3200.98
Running	0			28	3202.73	641.104	121.157	2954.13	3451.32
Running	1			34	2401.45	624.962	107.180	2183.39	2619.51
Lesion	0			31	2824.44	619.698	111.301	2597.13	3051.75
Lesion	1			31	2702.20	858.147	154.127	2387.43	3016.97
MS*Running	0	0		14	3052.48	547.971	146.451	2736.09	3368.87
MS*Running	0	1		17	2199.26	681.129	165.198	1849.06	2549.47
MS*Running	1	0		14	3352.98	710.458	189.878	2942.77	3763.18
MS*Running	1	1		17	2603.65	504.731	122.415	2344.14	2863.16
MS*Lesion	0	0		16	2716.88	579.734	144.933	2407.96	3025.79
MS*Lesion	0	1		15	2443.48	898.233	231.922	1946.05	2940.90
MS*Lesion	1	0		15	2939.18	659.913	170.389	2573.73	3304.62
MS*Lesion	1	1		16	2944.75	768.184	192.046	2535.42	3354.09
Running*Lesion	0	0		13	3234.33	549.537	152.414	2902.25	3566.41
Running*Lesion	0	1		15	3175.34	729.445	188.342	2771.39	3579.30
Running*Lesion	1	0		18	2528.41	493.211	116.251	2283.14	2773.68
Running*Lesion	1	1		16	2258.63	736.531	184.132	1866.16	2651.10
MS*Running*Les	0	0	0	7	3135.49	478.971	181.034	2692.52	3578.47
MS*Running*Les	0	0	1	7	2969.47	636.473	240.564	2380.83	3558.11
MS*Running*Les	0	1	0	9	2391.29	430.719	143.573	2060.21	2722.37
MS*Running*Les	0	1	1	8	1983.23	864.675	305.708	1260.35	2706.12
MS*Running*Les	1	0	0	6	3349.64	647.957	264.527	2669.65	4029.63
MS*Running*Les	1	0	1	8	3355.48	798.427	282.286	2687.98	4022.98
MS*Running*Les	1	1	0	9	2665.54	537.676	179.225	2252.24	3078.83
MS*Running*Les	1	1	1	8	2534.03	491.361	173.722	2123.24	2944.81

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total				62	22.2162	12.1690	1.54547	19.1258	25.3066
MS	0			31	21.9856	13.9364	2.50306	16.8737	27.0976
MS	1			31	22.4468	10.3331	1.85589	18.6565	26.2370
Running	0			28	25.7423	12.8619	2.43068	20.7549	30.7296
Running	1			34	19.3124	10.9154	1.87198	15.5038	23.1209
Lesion	0			31	23.2208	9.5715	1.71910	19.7100	26.7317
Lesion	1			31	21.2116	14.4017	2.58662	15.9290	26.4942
MS*Running	0	0		14	28.2067	15.6786	4.19029	19.1541	37.2592
MS*Running	0	1		17	16.8624	10.1337	2.45779	11.6521	22.0727
MS*Running	1	0		14	23.2779	9.2025	2.45947	17.9645	28.5913
MS*Running	1	1		17	21.7623	11.4145	2.76843	15.8935	27.6311
MS*Lesion	0	0		16	22.8495	9.2037	2.30093	17.9452	27.7538
MS*Lesion	0	1		15	21.0641	17.9909	4.64524	11.1011	31.0272
MS*Lesion	1	0		15	23.6169	10.2582	2.64867	17.9360	29.2977
MS*Lesion	1	1		16	21.3498	10.6150	2.65376	15.6934	27.0062
Running*Lesion	0	0		13	27.6401	10.1804	2.82355	21.4881	33.7921
Running*Lesion	0	1		15	24.0975	14.9654	3.86406	15.8099	32.3851
Running*Lesion	1	0		18	20.0291	7.9242	1.86775	16.0885	23.9697
Running*Lesion	1	1		16	18.5060	13.7712	3.44280	11.1678	25.8442
MS*Running*Lesi	0	0	0	7	28.6468	11.0794	4.18763	18.4000	38.8936
MS*Running*Lesi	0	0	1	7	27.7665	20.2337	7.64762	9.0534	46.4796
MS*Running*Lesi	0	1	0	9	18.3405	3.8057	1.26859	15.4151	21.2659
MS*Running*Lesi	0	1	1	8	15.1995	14.5672	5.15028	3.0210	27.3780
MS*Running*Lesi	1	0	0	6	26.4656	9.9177	4.04890	16.0576	36.8737
MS*Running*Lesi	1	0	1	8	20.8871	8.4719	2.99527	13.8044	27.9698
MS*Running*Lesi	1	1	0	9	21.7177	10.6082	3.53609	13.5635	29.8720
MS*Running*Lesi	1	1	1	8	21.8125	13.0074	4.59882	10.9380	32.6870

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total				62	10.7903	5.26708	0.66892	9.4527	12.1279
MS	0			31	10.5483	5.90389	1.06037	8.3828	12.7139
MS	1			31	11.0322	4.62949	0.83148	9.3341	12.7303
Running	0			28	12.6071	5.20924	0.98445	10.5872	14.6270
Running	1			34	9.2941	4.89606	0.83966	7.5858	11.0024
Lesion	0			31	12.0322	4.11893	0.73978	10.5214	13.5430
Lesion	1			31	9.5483	6.02128	1.08145	7.3397	11.7570
MS*Running	0	0		14	13.7142	6.14477	1.64226	10.1664	17.2621
MS*Running	0	1		17	7.9411	4.32247	1.04835	5.7187	10.1635
MS*Running	1	0		14	11.5000	3.99518	1.06775	9.1932	13.8067
MS*Running	1	1		17	10.6470	5.18340	1.25715	7.9820	13.3121
MS*Lesion	0	0		16	11.8750	4.37987	1.09497	9.5411	14.2088
MS*Lesion	0	1		15	9.1333	7.06972	1.82539	5.2182	13.0484
MS*Lesion	1	0		15	12.2000	3.96772	1.02446	10.0027	14.3972
MS*Lesion	1	1		16	9.9375	5.05264	1.26316	7.2451	12.6298
Running*Lesion	0	0		13	14.1538	3.53190	0.97957	12.0195	16.2881
Running*Lesion	0	1		15	11.2666	6.12333	1.58103	7.8756	14.6576
Running*Lesion	1	0		18	10.5000	3.89947	0.91911	8.5608	12.4391
Running*Lesion	1	1		16	7.9375	5.63877	1.40969	4.9328	10.9421
MS*Running*Les	0	0	0	7	15.1428	3.84831	1.45452	11.5837	18.7019
MS*Running*Les	0	0	1	7	12.2857	7.88911	2.98180	4.9895	19.5819
MS*Running*Les	0	1	0	9	9.3333	2.87228	0.95742	7.1255	11.5411
MS*Running*Les	0	1	1	8	6.3750	5.28981	1.87023	1.9526	10.7974
MS*Running*Les	1	0	0	6	13.0000	3.03315	1.23827	9.8169	16.1831
MS*Running*Les	1	0	1	8	10.3750	4.43806	1.56909	6.6646	14.0853
MS*Running*Les	1	1	0	9	11.6666	4.58257	1.52752	8.1441	15.1891
MS*Running*Les	1	1	1	8	9.5000	5.87974	2.07880	4.5844	14.4155

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total				62	147.504	136.067	17.2805	112.950	182.059
MS	0			31	145.611	163.524	29.3697	85.630	205.592
MS	1			31	149.397	104.394	18.7497	111.105	187.689
Running	0			28	169.519	131.040	24.7642	118.707	220.331
Running	1			34	129.374	139.370	23.9017	80.746	178.003
Lesion	0			31	180.271	171.774	30.8516	117.263	243.278
Lesion	1			31	114.738	76.942	13.8192	86.515	142.960
MS*Running	0	0		14	153.055	139.475	37.2762	72.525	233.586
MS*Running	0	1		17	139.480	185.050	44.8812	44.337	234.624
MS*Running	1	0		14	185.983	125.007	33.4096	113.806	258.160
MS*Running	1	1		17	119.268	74.842	18.1520	80.787	157.748
MS*Lesion	0	0		16	187.813	212.023	53.0058	74.834	300.792
MS*Lesion	0	1		15	100.596	70.205	18.1270	61.717	139.474
MS*Lesion	1	0		15	172.226	122.185	31.5481	104.562	239.890
MS*Lesion	1	1		16	127.995	82.780	20.6950	83.885	172.106
Running*Lesion	0	0		13	215.567	155.913	43.2425	121.349	309.784
Running*Lesion	0	1		15	129.611	92.763	23.9513	78.241	180.982
Running*Lesion	1	0		18	154.779	182.402	42.9926	64.073	245.486
Running*Lesion	1	1		16	100.794	58.140	14.5352	69.813	131.775
MS*Running*Lesi	0	0	0	7	204.979	174.622	66.0012	43.480	366.478
MS*Running*Lesi	0	0	1	7	101.131	73.244	27.6838	33.392	168.871
MS*Running*Lesi	0	1	0	9	174.461	246.901	82.3004	-15.323	364.247
MS*Running*Lesi	0	1	1	8	100.127	72.517	25.6387	39.501	160.753
MS*Running*Lesi	1	0	0	6	227.919	146.320	59.7348	74.365	381.472
MS*Running*Lesi	1	0	1	8	154.531	105.313	37.2338	66.487	242.575
MS*Running*Lesi	1	1	0	9	135.097	94.170	31.3901	62.711	207.483
MS*Running*Lesi	1	1	1	8	101.460	44.540	15.7472	64.224	138.697

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total				62	11.1791	3.04827	0.38713	10.4050	11.9533
MS	0			31	10.4569	3.07175	0.55170	9.3302	11.5837
MS	1			31	11.9013	2.89483	0.51992	10.8395	12.9632
Running	0			28	12.9618	2.63071	0.49715	11.9418	13.9819
Running	1			34	9.7110	2.56836	0.44047	8.8149	10.6072
Lesion	0			31	11.4461	2.60150	0.46724	10.4919	12.4004
Lesion	1			31	10.9122	3.46100	0.62161	9.6427	12.1817
MS*Running	0	0		14	12.3564	2.27656	0.60843	11.0419	13.6708
MS*Running	0	1		17	8.8927	2.77925	0.67406	7.4637	10.3217
MS*Running	1	0		14	13.5673	2.89850	0.77465	11.8938	15.2409
MS*Running	1	1		17	10.5293	2.11140	0.51209	9.4438	11.6149
MS*Lesion	0	0		16	10.9938	2.42339	0.60584	9.7024	12.2851
MS*Lesion	0	1		15	9.8843	3.63954	0.93972	7.8688	11.8998
MS*Lesion	1	0		15	11.9286	2.77971	0.71772	10.3893	13.4680
MS*Lesion	1	1		16	11.8758	3.08982	0.77245	10.2293	13.5222
Running*Lesion	0	0		13	13.1368	2.32736	0.64549	11.7304	14.5432
Running*Lesion	0	1		15	12.8102	2.94127	0.75943	11.1814	14.4390
Running*Lesion	1	0		18	10.2251	2.08691	0.49189	9.1873	11.2629
Running*Lesion	1	1		16	9.1327	2.98372	0.74593	7.5428	10.7226
MS*Running*Les	0	0	0	7	12.7215	2.01423	0.76130	10.8586	14.5843
MS*Running*Les	0	0	1	7	11.9913	2.61937	0.99003	9.5688	14.4138
MS*Running*Les	0	1	0	9	9.6500	1.82361	0.60787	8.2483	11.0518
MS*Running*Les	0	1	1	8	8.0407	3.50538	1.23934	5.1101	10.9713
MS*Running*Les	1	0	0	6	13.6214	2.75826	1.12605	10.7267	16.5160
MS*Running*Les	1	0	1	8	13.5268	3.18806	1.12715	10.8615	16.1921
MS*Running*Les	1	1	0	9	10.8001	2.27710	0.75903	9.0498	12.5505
MS*Running*Les	1	1	1	8	10.2247	2.01581	0.71269	8.5395	11.9100

A5.1.4.1.2.2.2. Open Field P49 Five min time-bins Second Five minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for 2. Distance moved (cm) (P49 Open field 5 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	47737293	1	47737293	1222.33	0.00000
MS	193520	1	193520	4.955	0.03020
Running	997681	1	997681	25.546	0.00000
Lesion	46650	1	46650	1.194	0.27927
MS*Running	4818	1	4818	0.123	0.72676
MS*Lesion	19156	1	19156	0.491	0.48670
Running*Lesion	13712	1	13712	0.351	0.55595
MS*Running*Lesion	1044	1	1044	0.027	0.87073
Error	2108934	54	39054		

A5.1.4.1.2.2.3. Open Field P49 Five min time-bins Second Five minutes Distance travelled post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 2. Distance moved (cm) (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 3905E2, df = 54.000

Cell No.	MS	{1} 2584.6	{2} 2942.1
1	0		0.02851
2	1	0.02851	

A5.1.4.1.2.2.4. Open Field P49 Five min time-bins Second Five minutes Distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Distance moved (cm) (P49 Open field 5 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 3905E2, df = 54.000

Cell No.	Running	{1} 3202.7	{2} 2401.5
1	0		0.00011
2	1	0.00011	

A5.1.4.1.2.2.5. Open Field P49 Five min time-bins Second Five minutes Inner Zone Duration ANOVA

Univariate Tests of Significance for 2. Inner zone duration (s) (P49 Open field 5 mi
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	31156.4	1	31156.4	213.695	0.00000
MS	0.82	1	0.82	0.005	0.94038
Running	678.98	1	678.98	4.657	0.03539
Lesion	86.08	1	86.08	0.590	0.44562
MS*Running	345.78	1	345.78	2.371	0.12939
MS*Lesion	2.04	1	2.04	0.014	0.90633
Running*Lesion	11.10	1	11.10	0.076	0.78370
MS*Running*Lesion	59.97	1	59.97	0.411	0.52400
Error	7873.10	54	145.80		

A5.1.4.1.2.2.6. Open Field P49 Five min time-bins Second Five minutes Inner Zone Duration Post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Inner zone duration (s) (P49 Open field 5 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 145.80, df = 54.000

Cell No.	Running	{1} 25.742	{2} 19.312
1	0		0.04174
2	1	0.04174	

A5.1.4.1.2.2.7. Open Field P49 Five min time-bins Second Five minutes Inner Zone Frequency ANOVA

Univariate Tests of Significance for 2. Inner Zone frequency (P49 Open field 5 mi
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	7324.22	1	7324.22	300.074	0.00000
MS	1.880	1	1.880	0.077	0.78242
Running	184.83	1	184.83	7.572	0.00805
Lesion	107.19	1	107.19	4.391	0.04081
MS*Running	86.201	1	86.201	3.531	0.06560
MS*Lesion	0.999	1	0.999	0.040	0.84046
Running*Lesion	0.122	1	0.122	0.005	0.94400
MS*Running*Lesion	0.298	1	0.298	0.012	0.91238
Error	1318.03	54	24.408		

A5.1.4.1.2.2.8. Open Field P49 Five min Time-bins Second Five minutes Inner Zone Frequency post hoc Newman Keuls test (running effect)

Newman-Keuls test; variable 2. Inner Zone frequency (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 24.408, df = 54.000

Cell No.	Running	{1} 12.607	{2} 9.2941
1	0		0.01128
2	1	0.01128	

A5.1.4.1.2.2.9. Open Field P49 Five min Time-bins Second Five minutes Inner Zone Frequency post hoc Newman Keuls test (lesion effect)

Newman-Keuls test; variable 2. Inner Zone frequency (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 24.408, df = 54.000

Cell No.	Lesion	{1} 12.032	{2} 9.5484
1	0		0.05298
2	1	0.05298	

A5.1.4.1.2.2.10. Open Field P49 Five Min Time-bins Second Five minutes Maximum Velocity ANOVA

Univariate Tests of Significance for 2. Velocity max (cm/s) (P49 Open field 5 mi
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	137128	1	137128	73.3773	0.00000
MS	139	1	139	0.0748	0.78549
Running	2998	1	2998	1.6046	0.21067
Lesion	7749	1	7749	4.1469	0.04662
MS*Running	1246	1	1246	0.6668	0.41773
MS*Lesion	482	1	482	0.2581	0.61347
Running*Lesion	457	1	457	0.2445	0.62291
MS*Running*Lesion	10	1	10	0.0053	0.94199
Error	10091	54	1868		

A5.1.4.1.2.2.11. Open Field P49 Five Min Time-bins Second Five minutes Maximum Velocity post hoc Newman Keuls test (lesion effect)

Newman-Keuls test; variable 2. Velocity max (cm/s) (P49 Open field 5 min timebins spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 18688., df = 54.000

Cell No.	Lesion	{1} 180.27	{2} 114.74
1	0		0.06460
2	1	0.06460	

A5.1.4.1.2.2.12. Open Field P49 Five Min Time-bins Second Five minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Velocity mean (cm/s) (P49 Open field 5 min Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	7816.44	1	7816.44	1181.52	0.00000
MS	31.714	1	31.714	4.794	0.03290
Running	164.63	1	164.63	24.886	0.00000
Lesion	8.629	1	8.629	1.304	0.25846
MS*Running	0.770	1	0.770	0.116	0.73438
MS*Lesion	2.655	1	2.655	0.401	0.52904
Running*Lesion	1.762	1	1.762	0.266	0.60789
MS*Running*Lesion	0.151	1	0.151	0.023	0.88039
Error	357.24	54	6.616		

A5.1.4.1.2.2.13. Open Field P49 Five Min time-bins Second Five minutes Mean velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 2. Velocity mean (cm/s) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 6.6156, df = 54.000		
	MS	{1} 10.457	{2} 11.901
1	0		0.03139
2	1	0.03139	

A5.1.4.1.2.2.14. Open Field P49 Five min Time-bins Second Five minutes Mean Velocity post hoc Newman Keuls test (running effect)

Cell No.	Newman-Keuls test; variable 2. Velocity mean (cm/s) (P49 Open field 5 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 6.6156, df = 54.000		
	Running	{1} 12.962	{2} 9.7111
1	0		0.00011
2	1	0.00011	

A5.1.4.1.2.3.1. Open Field P49 5 min time-bins Distance travelled Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (P49 Open field 5 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	1.267082E+0	1	1.267082E+0	2399.59	0.00000
MS	4.129534E+0	1	4.129534E+0	7.82(	0.00714
Running	1.538847E+0	1	1.538847E+0	29.14	0.00000
Lesion	8.431100E+0	1	8.431100E+0	1.597	0.21180
MS*Running	9.689276E+0	1	9.689276E+0	0.183	0.67009
MS*Lesion	7.470297E+0	1	7.470297E+0	0.141	0.70829
Running*Lesion	6.856467E+0	1	6.856467E+0	0.13(	0.71999
MS*Running*Lesion	1.086598E+0	1	1.086598E+0	0.021	0.88646
Error	2.851421E+0	54	5.280409E+0		
TIME	2.206311E+0	1	2.206311E+0	69.00	0.00000
TIME*MS	4.198046E+0	1	4.198046E+0	0.013	0.90919
TIME*Running	2.960837E+0	1	2.960837E+0	0.926	0.34017
TIME*Lesion	2.276218E+0	1	2.276218E+0	0.007	0.93306
TIME*MS*Running	7.132009E-0	1	7.132009E-0	0.00(	0.99881
TIME*MS*Lesion	1.194763E+0	1	1.194763E+0	0.374	0.54356
TIME*Running*Lesion	6.856467E+0	1	6.856467E+0	0.214	0.64515
TIME*MS*Running*Lesion	1.621209E+0	1	1.621209E+0	0.005	0.94349
Error	1.726458E+0	54	3.197144E+0		

A5.1.4.1.2.3.2. Open Field P49 5 min time-bins Distance travelled post hoc Newman Keuls test (Time effect)

Cell No.	Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 3197E2, df = 54.000 TIME	{1} 3618.7	{2} 2763.3
1	1. Distance moved (cm		0.000113
2	2. Distance moved (cm	0.000113	

A5.1.4.1.2.3.3. Open Field P49 5min time-bins Distance travelled post hoc Newman Keuls test (MS*Running*Lesion*Time)

Cell No.	Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 4239E2, df = 101.85							
	MS	Running	Lesion	TIME	{1} 3859.5	{2} 3135.5	{3} 3726.6	{4} 2969.5
1	0	0	0	1. Distance moved (cm		0.21777	0.69104	0.20080
2	0	0	0	2. Distance moved (cm	0.21777		0.56970	0.87259
3	0	0	1	1. Distance moved (cm	0.69104	0.56970		0.20516
4	0	0	1	2. Distance moved (cm	0.20080	0.87259	0.20516	
5	0	1	0	1. Distance moved (cm	0.44033	0.84087	0.61953	0.89722
6	0	1	0	2. Distance moved (cm	0.00186	0.23275	0.00642	0.31186
7	0	1	1	1. Distance moved (cm	0.27551	0.79035	0.46143	0.81779
8	0	1	1	2. Distance moved (cm	0.00014	0.01379	0.00018	0.03099
9	1	0	0	1. Distance moved (cm	0.55154	0.05301	0.47644	0.01668
10	1	0	0	2. Distance moved (cm	0.64664	0.79730	0.79029	0.78500
11	1	0	1	1. Distance moved (cm	0.62075	0.17296	0.64463	0.07094
12	1	0	1	2. Distance moved (cm	0.55760	0.91200	0.68268	0.85578
13	1	1	0	1. Distance moved (cm	0.78900	0.65607	0.79697	0.47915
14	1	1	0	2. Distance moved (cm	0.02156	0.49667	0.05799	0.36439
15	1	1	1	1. Distance moved (cm	0.66950	0.83765	0.74321	0.72332
16	1	1	1	2. Distance moved (cm	0.00708	0.37735	0.02186	0.39540

Cell No.	Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 4239E2, df = 101.85							
	MS	Running	Lesion	TIME	{5} 3202.7	{6} 2391.3	{7} 3046.6	{8} 1983.2
1	0	0	0	1. Distance moved (cm	0.44033	0.00186	0.27551	0.00014
2	0	0	0	2. Distance moved (cm	0.84087	0.23275	0.79035	0.01379
3	0	0	1	1. Distance moved (cm	0.61953	0.00642	0.46143	0.00018
4	0	0	1	2. Distance moved (cm	0.89722	0.31186	0.81779	0.03099
5	0	1	0	1. Distance moved (cm		0.09395	0.88644	0.00942
6	0	1	0	2. Distance moved (cm	0.09395		0.29075	0.22403
7	0	1	1	1. Distance moved (cm	0.88644	0.29075		0.00708
8	0	1	1	2. Distance moved (cm	0.00942	0.22403	0.00708	
9	1	0	0	1. Distance moved (cm	0.07603	0.00017	0.02912	0.00014
10	1	0	0	2. Distance moved (cm	0.66050	0.08902	0.80024	0.00271
11	1	0	1	1. Distance moved (cm	0.22217	0.00041	0.10975	0.00014
12	1	0	1	2. Distance moved (cm	0.89093	0.10318	0.88614	0.00313
13	1	1	0	1. Distance moved (cm	0.68401	0.01280	0.56396	0.00028
14	1	1	0	2. Distance moved (cm	0.49424	0.69016	0.49043	0.17831
15	1	1	1	1. Distance moved (cm	0.83747	0.04561	0.78244	0.00103
16	1	1	1	2. Distance moved (cm	0.34691	0.66968	0.41959	0.22909

Cell No.	MS	Running	Lesion	TIME	{9} 4207.5	{10} 3349.6	{11} 4025.1	{12} 3355.5
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 4239E2, df = 101.85								
1	0	0	0	1. Distance moved (cn	0.55154	0.64664	0.62075	0.55760
2	0	0	0	2. Distance moved (cn	0.05301	0.79730	0.17296	0.91200
3	0	0	1	1. Distance moved (cn	0.47644	0.79029	0.64463	0.68268
4	0	0	1	2. Distance moved (cn	0.01668	0.78500	0.07094	0.85578
5	0	1	0	1. Distance moved (cn	0.07603	0.66050	0.22217	0.89093
6	0	1	0	2. Distance moved (cn	0.00017	0.08902	0.00041	0.10318
7	0	1	1	1. Distance moved (cn	0.02912	0.80024	0.10975	0.88614
8	0	1	1	2. Distance moved (cn	0.00014	0.00271	0.00014	0.00313
9	1	0	0	1. Distance moved (cn		0.08018	0.58582	0.15143
10	1	0	0	2. Distance moved (cn	0.08018		0.40547	0.98615
11	1	0	1	1. Distance moved (cn	0.58582	0.40547		0.20734
12	1	0	1	2. Distance moved (cn	0.15143	0.98615	0.20734	
13	1	1	0	1. Distance moved (cn	0.43858	0.81932	0.65757	0.67011
14	1	1	0	2. Distance moved (cn	0.00087	0.32137	0.00501	0.37914
15	1	1	1	1. Distance moved (cn	0.25754	0.91778	0.48170	0.70682
16	1	1	1	2. Distance moved (cn	0.00030	0.19092	0.00146	0.22347

Cell No.	MS	Running	Lesion	TIME	{13} 3640.5	{14} 2665.5	{15} 3481.3	{16} 2534.0
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 4239E2, df = 101.85								
1	0	0	0	1. Distance moved (cn	0.78900	0.02156	0.66950	0.00708
2	0	0	0	2. Distance moved (cn	0.65607	0.49667	0.83765	0.37735
3	0	0	1	1. Distance moved (cn	0.79697	0.05799	0.74321	0.02186
4	0	0	1	2. Distance moved (cn	0.47915	0.36439	0.72332	0.39540
5	0	1	0	1. Distance moved (cn	0.68401	0.49424	0.83747	0.34691
6	0	1	0	2. Distance moved (cn	0.01280	0.69016	0.04561	0.66968
7	0	1	1	1. Distance moved (cn	0.56396	0.49043	0.78244	0.41959
8	0	1	1	2. Distance moved (cn	0.00028	0.17831	0.00103	0.22909
9	1	0	0	1. Distance moved (cn	0.43858	0.00087	0.25754	0.00030
10	1	0	0	2. Distance moved (cn	0.81932	0.32137	0.91778	0.19092
11	1	0	1	1. Distance moved (cn	0.65757	0.00501	0.48170	0.00146
12	1	0	1	2. Distance moved (cn	0.67011	0.37914	0.70682	0.22347
13	1	1	0	1. Distance moved (cn		0.03515	0.63436	0.03969
14	1	1	0	2. Distance moved (cn	0.03515		0.23110	0.69430
15	1	1	1	1. Distance moved (cn	0.63436	0.23110		0.04518
16	1	1	1	2. Distance moved (cn	0.03969	0.69430	0.04518	

A5.1.4.1.2.3.4. Open Field P49 5 min time-bins Inner zone duration Repeated measures ANOVA

Repeated Measures Analysis of Variance (P49 Open field 5 min timebins spread
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	42174.79	1	42174.79	209.3691	0.00000(
MS	30.11	1	30.11	0.1495	0.70057:
Running	458.33	1	458.33	2.2753	0.13727(
Lesion	211.91	1	211.91	1.052(	0.30961(
MS*Running	646.28	1	646.28	3.2083	0.07887(
MS*Lesion	58.41	1	58.41	0.290(	0.59245-
Running*Lesion	0.41	1	0.41	0.002(	0.96417:
MS*Running*Lesion	91.06	1	91.06	0.4521	0.50422:
Error	10877.63	54	201.44		
TIME	1958.99	1	1958.99	41.442(	0.00000(
TIME*MS	45.83	1	45.83	0.969(	0.32916-
TIME*Running	238.45	1	238.45	5.0445	0.028817
TIME*Lesion	2.06	1	2.06	0.0437	0.83527-
TIME*MS*Running	0.77	1	0.77	0.0162	0.899148
TIME*MS*Lesion	31.63	1	31.63	0.6691	0.41696:
TIME*Running*Lesion	16.57	1	16.57	0.3505	0.556323
TIME*MS*Running*Lesion	1.99	1	1.99	0.042(	0.83835:
Error	2552.57	54	47.27		

A5.1.4.1.2.3.5. Open Field P49 5 min time-bins Inner zone duration post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 47.270, df = 54.000

Cell No.	TIME	{1} 14.494	{2} 22.216
1	1. Inner zone duration (s)		0.000113
2	2. Inner zone duration (s	0.000113	

A5.1.4.1.2.3.6. Open Field P49 5 min time-bins Inner zone duration post hoc Newman Keuls test (Time*Running)

Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 124.35, df = 78.021

Cell No.	Running	TIME	{1} 14.909	{2} 25.742	{3} 14.152	{4} 19.312
1	0	1. Inner zone duration		0.00012	0.79092-	0.12596(
2	0	2. Inner zone duration	0.00012		0.00074(	0.02674(
3	1	1. Inner zone duration	0.79092-	0.00074(		0.01322:
4	1	2. Inner zone duration	0.12596(	0.02674(	0.01322:	

A5.1.4.1.2.3.7. Open Field P49 5 min time-bins Inner Zone frequency Repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	11102.24	1	11102.24	291.1059	0.00000(
MS	0.09	1	0.09	0.0024	0.96091(
Running	46.55	1	46.55	1.2205	0.27416(
Lesion	164.65	1	164.65	4.3172	0.04249(
MS*Running	199.03	1	199.03	5.2188	0.02630(
MS*Lesion	6.28	1	6.28	0.1647	0.68649(
Running*Lesion	2.28	1	2.28	0.0597	0.80787(
MS*Running*Lesion	0.06	1	0.06	0.0017	0.96725(
Error	2059.46	54	38.14		
TIME	245.35	1	245.35	19.5752	0.00004(
TIME*MS	5.03	1	5.03	0.4015	0.52901(
TIME*Running	153.87	1	153.87	12.2764	0.00093(
TIME*Lesion	3.28	1	3.28	0.2615	0.61117(
TIME*MS*Running	0.96	1	0.96	0.0763	0.78346(
TIME*MS*Lesion	15.36	1	15.36	1.2256	0.27317(
TIME*Running*Lesion	4.01	1	4.01	0.3198	0.57406(
TIME*MS*Running*Lesion	1.05	1	1.05	0.0842	0.77284(
Error	676.82	54	12.53		

A5.1.4.1.2.3.8. Open Field P49 5 min time-bins Inner Zone frequency post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 8.1774	{2} 10.790
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 12.534, df = 54.000			
1	1. Inner Zone frequency		0.000241
2	2. Inner Zone frequenc	0.000241	

A5.1.4.1.2.3.9. Open Field P49 5 min time-bins Inner Zone frequency post hoc Newman Keuls test (Time*Running)

Cell No.	Running	TIME	{1} 7.5357	{2} 12.607	{3} 8.7059	{4} 9.2941
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spreadsh Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 25.336, df = 86.033						
1	0	1. Inner Zone frequen		0.00016(	0.36498(	0.36175(
2	0	2. Inner Zone frequen	0.00016(		0.00888(	0.01171(
3	1	1. Inner Zone frequen	0.36498(	0.00888(		0.51788(
4	1	2. Inner Zone frequen	0.36175(	0.01171	0.51788(	

A5.1.4.1.2.3.10. Open Field P49 5 min time-bins maximum velocity repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	2079818	1	2079818	109.5944	0.000000
MS	5351	1	5351	0.2820	0.597601
Running	33379	1	33379	1.7589	0.190348
Lesion	79380	1	79380	4.1829	0.045720
MS*Running	10931	1	10931	0.5760	0.451178
MS*Lesion	16	1	16	0.0009	0.976738
Running*Lesion	1715	1	1715	0.0904	0.764864
MS*Running*Lesion	0	1	0	0.0000	0.998880
Error	1024781	54	18977		
TIME	45758	1	45758	8.4325	0.005329
TIME*MS	411	1	411	0.0757	0.784245
TIME*Running	3869	1	3869	0.7130	0.402163
TIME*Lesion	12533	1	12533	2.3097	0.134406
TIME*MS*Running	2843	1	2843	0.5240	0.472272
TIME*MS*Lesion	10457	1	10457	1.9271	0.170777
TIME*Running*Lesion	2938	1	2938	0.5414	0.465051
TIME*MS*Running*Lesion	205	1	205	0.0378	0.846530
Error	293025	54	5426		

A5.1.4.1.2.3.11. Open Field P49 5 min time-bins maximum velocity post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 109.97	{2} 147.50
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 5426.4, df = 54.000			
1	1. Velocity max (cm/s		0.006530
2	2. Velocity max (cm/s	0.006530	

12. Open Field P49 5 min time-bins Mean velocity repeated measures ANOVA

Repeated Measures Analysis of Variance (P49 Open field 5 min timebins spread
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	20718.57	1	20718.57	2364.107	0.000000
MS	67.43	1	67.43	7.694	0.007591
Running	254.67	1	254.67	29.060	0.000002
Lesion	15.78	1	15.78	1.800	0.185289
MS*Running	1.46	1	1.46	0.166	0.685118
MS*Lesion	0.77	1	0.77	0.088	0.767883
Running*Lesion	0.69	1	0.69	0.078	0.780575
MS*Running*Lesion	0.11	1	0.11	0.012	0.912458
Error	473.25	54	8.76		
TIME	357.51	1	357.51	69.031	0.000000
TIME*MS	0.06	1	0.06	0.012	0.913809
TIME*Running	4.78	1	4.78	0.924	0.340788
TIME*Lesion	0.03	1	0.03	0.006	0.936522
TIME*MS*Running	0.00	1	0.00	0.000	0.988236
TIME*MS*Lesion	2.03	1	2.03	0.393	0.533441
TIME*Running*Lesion	1.10	1	1.10	0.212	0.646850
TIME*MS*Running*Lesion	0.05	1	0.05	0.010	0.922322
Error	279.66	54	5.18		

13. Open Field P49 5 min time-bins Mean velocity post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 5.1790, df = 54.000

Cell No.	TIME	{1} 14.623	{2} 11.179
1	1. Velocity mean (cm/s		0.000113
2	2. Velocity mean (cm/s	0.000113	

A5.1.4.1.3.1.1. Open Field P49 1 min Time bins Data Spreadsheet 1st Time bin

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Inner zone duration (s)	6 1. Inner Zone frequency	7 1. Velocity max (cm/s)	8 1. Velocity mean (cm/s)
164	1	1	0	424.301	0	0	29.2526	8.48603
129	1	1	1	942.458	1.83333	3	67.2935	18.8491
148	1	0	0	648.652	2.83333	1	47.8268	12.9730
141	1	0	1	936.853	0.5	1	64.4543	18.7370
207	0	1	1	81.7578	0	0	12.3442	1.63515
176	0	0	0	290.601	0	0	43.6911	5.81203
174	0	1	0	421.213	0	0	41.0021	8.42426
227	0	0	1	417.092	0	0	36.656	8.34186
122	1	1	0	1022.68	4.66666	3	64.4728	20.4536
135	1	0	1	953.189	0	0	62.2133	19.0638
197	1	0	0	958.390	0	0	64.327	19.1678
195	1	1	1	592.732	0	0	53.682	11.8546
154	1	0	1	624.619	0	0	53.7396	12.492
203	0	1	1	834.364	1.49999	1	58.9281	16.6872
193	0	0	1	696.280	8.16666	3	62.0438	13.9256
167	0	0	0	1024.59	4.16666	1	65.3488	20.4918
222	0	1	0	696.305	2.33333	2	55.5184	13.9261
182	1	1	1	888.391	2.33333	1	58.122	17.7678
209	1	0	1	680.046	2.16666	1	64.7350	13.6009
144	1	0	0	828.458	0	0	57.0329	16.5691
216	1	1	0	877.66	0.33333	1	80.1790	17.5532
188	0	1	1	978.128	2.33333	1	63.7981	19.5625
169	0	0	0	1027.7	3.83333	3	71.2909	20.5548
234	0	0	1	902.564	3.00001	1	52.2593	18.0512
117	0	0	1	943.194	2.83333	1	82.7339	18.8638
126	0	0	1	1082.83	0	0	66.7305	21.6567
138	1	1	0	322.295	0	0	37.2601	6.44590
157	1	0	1	771.750	0	0	60.3835	15.4350
131	0	1	0	913.848	0	0	70.1731	18.2769
191	0	1	1	668.217	0	0	71.2588	13.3643
160	0	0	0	878.19	0.33333	1	65.402	17.5638
186	1	0	1	774.333	0	0	69.9491	15.4866

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Inner zone duration (s)	6 1. Inner Zone frequency	7 1. Velocity max (cm/s)	8 1. Velocity mean (cm/s)
220	1	1	1	519.265	0	0	49.5903	10.3853
190	1	0	0	1199.62	2.72176	2	304.00	24.9921
143	1	0	1	675.239	0	0	62.816	14.0675
196	1	1	0	680.468	0	0	65.90	14.1764
145	1	1	1	300.427	0	0	45.8632	6.25891
198	1	1	0	605.220	2.15053	1	186.349	12.6087
139	1	0	0	728.511	0.87365	1	157.426	15.1773
210	0	1	1	775.306	4.13305	3	170.72	16.1522
232	0	1	0	600.180	0.47042	1	267.422	12.5037
171	0	0	0	934.298	0	0	89.6366	19.4645
219	0	0	0	939.139	1.612	1	151.904	19.5654
205	0	0	1	718.773	4.26746	2	271.994	14.9744
137	0	1	1	700.227	0	0	83.7051	14.588
250	1	0	0	1217.65	4.33333	2	89.9627	24.3530
271	1	1	0	1071.81	4.99998	2	67.312	21.4363
301	0	1	1	882.755	3.83333	2	61.6451	17.6551
305	0	1	0	784.605	0	0	57.5443	15.6921
309	1	0	1	997.057	2.16666	1	61.246	19.9411
306	1	1	1	951.891	0.16666	1	77.6950	19.0378
312	0	1	1	795.363	5.00001	5	58.5136	15.9072
313	0	1	0	654.573	0	0	44.5435	13.0914
315	0	0	0	1019.28	3.49999	1	74.4581	20.385
314	0	1	0	597.239	3.66666	1	59.5050	11.944
317	1	1	1	1084.91	4.66666	1	64.9905	21.6982
319	1	1	0	853.269	4.5	3	64.817	17.065
318	1	1	0	746.295	0	0	61.8476	14.9259
320	1	1	1	736.546	1.83333	2	59.323	14.7309
322	0	0	1	873.34	0	0	57.3397	17.4668
323	0	1	0	882.22	2.99999	1	62.1269	17.6444
324	0	1	0	487.606	0	0	49.172	9.75213

A5.1.4.1.3.1.2. Open Field P49 1 min Time-bins 1st interval descriptive statistics

	Descriptive Statistics (P49 1 min timebins spreadsheet)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total				62	776.078	230.878	29.3216	717.446	834.71
MS	0			31	758.124	233.591	41.9543	672.441	843.80
MS	1			31	794.032	230.554	41.4088	709.464	878.60
Running	0			28	847.939	210.876	39.8518	766.170	929.70
Running	1			34	716.898	232.723	39.9117	635.697	798.10
Lesion	0			31	785.062	242.575	43.5679	696.085	874.04
Lesion	1			31	767.094	222.209	39.9100	685.587	848.60
MS*Running	0	0		14	839.138	234.080	62.5606	703.983	974.29
MS*Running	0	1		17	691.406	217.525	52.7577	579.565	803.24
MS*Running	1	0		14	856.741	193.384	51.6841	745.084	968.39
MS*Running	1	1		17	742.390	251.011	60.8792	613.332	871.44
MS*Lesion	0	0		16	759.477	231.096	57.7741	636.334	882.62
MS*Lesion	0	1		15	756.680	244.337	63.0875	621.371	891.99
MS*Lesion	1	0		15	812.353	259.472	66.9953	668.662	956.04
MS*Lesion	1	1		16	776.857	206.938	51.7346	666.587	887.12
Running*Lesion	0	0		13	899.625	243.653	67.5773	752.387	1046.86
Running*Lesion	0	1		15	803.145	173.909	44.9031	706.837	899.45
Running*Lesion	1	0		18	702.322	211.303	49.8047	597.243	807.40
Running*Lesion	1	1		16	733.296	260.783	65.1958	594.335	872.25
MS*Running*Lesi	0	0	0	7	873.406	263.207	99.4831	629.980	1116.83
MS*Running*Lesi	0	0	1	7	804.869	216.104	81.6799	605.005	1004.73
MS*Running*Lesi	0	1	0	9	670.865	167.290	55.7633	542.275	799.45
MS*Running*Lesi	0	1	1	8	714.515	273.893	96.8358	485.534	943.49
MS*Running*Lesi	1	0	0	6	930.214	239.294	97.6916	679.089	1181.33
MS*Running*Lesi	1	0	1	8	801.636	143.016	50.5638	682.071	921.20
MS*Running*Lesi	1	1	0	9	733.779	254.297	84.7659	538.308	929.25
MS*Running*Lesi	1	1	1	8	752.078	264.400	93.4796	531.034	973.12

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s -95.00%	1. Inner zone duration (s) +95.00%
Total				62	1.63005	1.92969	0.24507	1.14000	2.12010
MS	0			31	1.87044	2.10615	0.37827	1.09790	2.64299
MS	1			31	1.38965	1.73672	0.31192	0.75261	2.02668
Running	0			28	1.68961	2.05149	0.38769	0.89412	2.48509
Running	1			34	1.58100	1.85318	0.31781	0.93439	2.22760
Lesion	0			31	1.62352	1.82718	0.32817	0.95330	2.29374
Lesion	1			31	1.63657	2.05739	0.36951	0.88191	2.39123
MS*Running	0	0		14	2.26526	2.43550	0.65091	0.85904	3.67148
MS*Running	0	1		17	1.54530	1.80253	0.43717	0.61852	2.47208
MS*Running	1	0		14	1.11395	1.44762	0.38689	0.27812	1.94979
MS*Running	1	1		17	1.61669	1.95740	0.47474	0.61029	2.62310
MS*Lesion	0	0		16	1.43229	1.67938	0.41984	0.53741	2.32717
MS*Lesion	0	1		15	2.33781	2.45566	0.63405	0.97912	3.69771
MS*Lesion	1	0		15	1.82750	2.01146	0.51935	0.71359	2.94141
MS*Lesion	1	1		16	0.97916	1.37285	0.34321	0.24762	1.71070
Running*Lesion	0	0		13	1.86217	1.75391	0.48644	0.80229	2.92206
Running*Lesion	0	1		15	1.54005	2.32986	0.60156	0.24981	2.83029
Running*Lesion	1	0		18	1.45116	1.90923	0.45001	0.50172	2.40060
Running*Lesion	1	1		16	1.72706	1.83882	0.45970	0.74225	2.70690
MS*Running*Les	0	0	0	7	1.92089	1.87924	0.71028	0.18287	3.65890
MS*Running*Les	0	0	1	7	2.60964	3.00726	1.13664	-0.17162	5.39089
MS*Running*Les	0	1	0	9	1.05226	1.50601	0.50200	-0.10535	2.20989
MS*Running*Les	0	1	1	8	2.09996	2.04213	0.72200	0.39269	3.80723
MS*Running*Les	1	0	0	6	1.79368	1.77048	0.72279	-0.06432	3.65169
MS*Running*Les	1	0	1	8	0.60416	0.97970	0.34637	-0.21488	1.42322
MS*Running*Les	1	1	0	9	1.85005	2.26271	0.75424	0.11077	3.58933
MS*Running*Les	1	1	1	8	1.35416	1.66055	0.58709	-0.03409	2.74242

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total				62	0.93548	1.09949	0.13963	0.65626	1.21470
MS	0			31	1.00000	1.21106	0.21751	0.55578	1.44422
MS	1			31	0.87096	0.99136	0.17805	0.50733	1.23460
Running	0			28	0.82142	0.90486	0.17100	0.47055	1.17229
Running	1			34	1.02941	1.24280	0.21313	0.59577	1.46304
Lesion	0			31	0.90322	0.97825	0.17570	0.54439	1.26205
Lesion	1			31	0.96774	1.22430	0.21989	0.51866	1.41682
MS*Running	0	0		14	1.00000	1.03774	0.27735	0.40082	1.59917
MS*Running	0	1		17	1.00000	1.36930	0.33210	0.29596	1.70403
MS*Running	1	0		14	0.64285	0.74494	0.19909	0.21273	1.07297
MS*Running	1	1		17	1.05882	1.14403	0.27747	0.47061	1.64703
MS*Lesion	0	0		16	0.75000	0.85634	0.21408	0.29368	1.20631
MS*Lesion	0	1		15	1.26666	1.48644	0.38379	0.44350	2.08983
MS*Lesion	1	0		15	1.06666	1.09978	0.28396	0.45762	1.67570
MS*Lesion	1	1		16	0.68750	0.87321	0.21830	0.22219	1.15280
Running*Lesion	0	0		13	1.00000	0.91287	0.25318	0.44835	1.55164
Running*Lesion	0	1		15	0.66666	0.89973	0.23231	0.16841	1.16492
Running*Lesion	1	0		18	0.83333	1.04318	0.24588	0.31457	1.35209
Running*Lesion	1	1		16	1.25000	1.43759	0.35939	0.48396	2.01603
MS*Running*Lesi	0	0	0	7	1.00000	1.00000	0.37796	0.07515	1.92484
MS*Running*Lesi	0	0	1	7	1.00000	1.15470	0.43643	-0.06792	2.06792
MS*Running*Lesi	0	1	0	9	0.55555	0.72648	0.24216	-0.00286	1.11398
MS*Running*Lesi	0	1	1	8	1.50000	1.77281	0.62678	0.01789	2.98210
MS*Running*Lesi	1	0	0	6	1.00000	0.89442	0.36514	0.06135	1.93864
MS*Running*Lesi	1	0	1	8	0.37500	0.51754	0.18298	-0.05768	0.80768
MS*Running*Lesi	1	1	0	9	1.11111	1.26929	0.42309	0.13544	2.08677
MS*Running*Lesi	1	1	1	8	1.00000	1.06904	0.37796	0.10625	1.89374

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total				62	77.959	54.9564	6.9794	64.0033	91.916
MS	0			31	79.981	58.5504	10.5159	58.5048	101.457
MS	1			31	75.938	52.0047	9.3403	56.8625	95.013
Running	0			28	86.128	63.0362	11.9127	61.6860	110.571
Running	1			34	71.232	47.2064	8.0958	54.7609	87.703
Lesion	0			31	85.378	63.7616	11.4519	61.9900	108.766
Lesion	1			31	70.541	44.2923	7.9551	54.2947	86.787
MS*Running	0	0		14	85.106	60.3071	16.1177	50.2862	119.926
MS*Running	0	1		17	75.760	58.5733	14.2061	45.6448	105.876
MS*Running	1	0		14	87.151	67.9234	18.1533	47.9334	126.369
MS*Running	1	1		17	66.703	33.4927	8.1231	49.4832	83.924
MS*Lesion	0	0		16	79.296	56.5113	14.1278	49.1836	109.409
MS*Lesion	0	1		15	80.711	62.6361	16.1725	46.0252	115.398
MS*Lesion	1	0		15	91.865	72.1310	18.6241	51.9203	131.810
MS*Lesion	1	1		16	61.006	7.8404	1.9601	56.8284	65.184
Running*Lesion	0	0		13	98.639	71.1093	19.7221	55.6684	141.610
Running*Lesion	0	1		15	75.286	55.2978	14.2778	44.6635	105.909
Running*Lesion	1	0		18	75.800	58.0823	13.6901	46.9167	104.684
Running*Lesion	1	1		16	66.092	32.0313	8.0078	49.0243	83.161
MS*Running*Lesi	0	0	0	7	80.247	34.4368	13.0158	48.3988	112.096
MS*Running*Lesi	0	0	1	7	89.965	81.4806	30.7967	14.6085	165.322
MS*Running*Lesi	0	1	0	9	78.556	71.3935	23.7978	23.6785	133.434
MS*Running*Lesi	0	1	1	8	72.615	44.6696	15.7930	35.2703	109.959
MS*Running*Lesi	1	0	0	6	120.096	98.4204	40.1799	16.8105	223.382
MS*Running*Lesi	1	0	1	8	62.442	4.5865	1.6215	58.6078	66.276
MS*Running*Lesi	1	1	0	9	73.044	45.3286	15.1095	38.2017	107.887
MS*Running*Lesi	1	1	1	8	59.570	10.2944	3.6396	50.9638	68.176

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total				62	15.6406	4.63620	0.58879	14.4632	16.8180
MS	0			31	15.2879	4.70114	0.84435	13.5635	17.0123
MS	1			31	15.9932	4.62032	0.82983	14.2985	17.6880
Running	0			28	17.1134	4.27126	0.80719	15.4572	18.7696
Running	1			34	14.4277	4.63132	0.79426	12.8117	16.0436
Lesion	0			31	15.8541	4.91182	0.88219	14.0524	17.6558
Lesion	1			31	15.4271	4.41417	0.79281	13.8079	17.0462
MS*Running	0	0		14	16.9370	4.71806	1.26095	14.2129	19.6612
MS*Running	0	1		17	13.9298	4.36042	1.05755	11.6879	16.1718
MS*Running	1	0		14	17.2898	3.94507	1.05436	15.0119	19.5676
MS*Running	1	1		17	14.9255	4.96979	1.20535	12.3703	17.4808
MS*Lesion	0	0		16	15.3184	4.68700	1.17175	12.8208	17.8159
MS*Lesion	0	1		15	15.2555	4.88052	1.26014	12.5527	17.9582
MS*Lesion	1	0		15	16.4256	5.24247	1.35360	13.5224	19.3288
MS*Lesion	1	1		16	15.5879	4.08428	1.02107	13.4116	17.7643
Running*Lesion	0	0		13	18.2362	4.97439	1.37964	15.2302	21.2422
Running*Lesion	0	1		15	16.1403	3.43359	0.88655	14.2388	18.0418
Running*Lesion	1	0		18	14.1337	4.19948	0.98982	12.0454	16.2221
Running*Lesion	1	1		16	14.7584	5.19429	1.29857	11.9906	17.5262
MS*Running*Lesi	0	0	0	7	17.6911	5.33999	2.01832	12.7525	22.6298
MS*Running*Lesi	0	0	1	7	16.1829	4.28811	1.62075	12.2171	20.1488
MS*Running*Lesi	0	1	0	9	13.4729	3.32346	1.10782	10.9182	16.0275
MS*Running*Lesi	0	1	1	8	14.4440	5.50137	1.94502	9.8447	19.0432
MS*Running*Lesi	1	0	0	6	18.8721	4.92618	2.01110	13.7023	24.0418
MS*Running*Lesi	1	0	1	8	16.1030	2.79546	0.98834	13.7660	18.4401
MS*Running*Lesi	1	1	0	9	14.7946	5.04456	1.68152	10.9170	18.6722
MS*Running*Lesi	1	1	1	8	15.0728	5.22730	1.84813	10.7027	19.4430

A5.1.4.1.3.1.3. Open Field P49 1 min intervals 1st interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	3759092	1	3759092	704.569	0.00000
MS	2261	1	2261	0.423	0.51781
Running	27667	1	27667	5.185	0.02675
Lesion	1740	1	1740	0.326	0.57024
MS*Running	209	1	209	0.039	0.84363
MS*Lesion	694	1	694	0.130	0.71962
Running*Lesion	6394	1	6394	1.198	0.27848
MS*Running*Lesion	114	1	114	0.021	0.88400
Error	288106	54	5335		

A5.1.4.1.3.1.4. Open Field P49 1 min intervals 1st interval post hoc Newman Keuls (Running effect)

Newman-Keuls test; variable 1. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 53353., df = 54.000

Cell No.	Running	{1} 847.94	{2} 716.90
1	0		0.030517
2	1	0.030517	

A5.1.4.1.3.1.5. Open Field P49 1 min intervals 1st interval Inner Zone duration ANOVA

Univariate Tests of Significance for 1. Inner zone duration (s) (P49 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	168.146	1	168.146	44.1970	0.00000
MS	4.124	1	4.124	1.0841	0.30240
Running	0.311	1	0.311	0.0819	0.77581
Lesion	0.002	1	0.002	0.0006	0.97971
MS*Running	4.547	1	4.547	1.1952	0.27913
MS*Lesion	11.155	1	11.155	2.9322	0.09256
Running*Lesion	1.055	1	1.055	0.2774	0.60053
MS*Running*Lesion	0.106	1	0.106	0.0280	0.86761
Error	205.441	54	3.804		

A5.1.4.1.3.1.6. Open Field P49 1 min intervals 1st interval Inner Zone frequency ANOVA

Univariate Tests of Significance for 1. Inner Zone frequency (P49 1 min ti
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	54.1888	1	54.1888	43.6836	0.00000
MS	0.3089	1	0.3089	0.2490	0.61977
Running	0.5971	1	0.5971	0.4813	0.49078
Lesion	0.0413	1	0.0413	0.0333	0.85581
MS*Running	0.4412	1	0.4412	0.3557	0.55338
MS*Lesion	2.6908	1	2.6908	2.1691	0.14660
Running*Lesion	2.0262	1	2.0262	1.6334	0.20669
MS*Running*Lesion	0.1766	1	0.1766	0.1423	0.70740
Error	66.9861	54	1.2404		

A5.1.4.1.3.1.7. Open Field P49 1 min intervals 1st interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	386032.3	1	386032.3	124.486	0.00000
MS	37.0	1	37.0	0.011	0.91343
Running	4531.5	1	4531.5	1.461	0.23198
Lesion	4321.9	1	4321.9	1.393	0.24295
MS*Running	908.7	1	908.7	0.293	0.59051
MS*Lesion	5345.6	1	5345.6	1.723	0.19475
Running*Lesion	775.0	1	775.0	0.249	0.61916
MS*Running*Lesion	3411.5	1	3411.5	1.100	0.29890
Error	167453.3	54	3101.0		

A5.1.4.1.3.1.8. Open Field P49 1 min intervals 1st interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	15278.25	1	15278.25	715.837	0.00000
MS	8.87	1	8.87	0.415	0.52182
Running	116.65	1	116.65	5.465	0.02313
Lesion	8.73	1	8.73	0.409	0.52505
MS*Running	0.69	1	0.69	0.032	0.85821
MS*Lesion	3.64	1	3.64	0.170	0.68140
Running*Lesion	29.10	1	29.10	1.363	0.24807
MS*Running*Lesion	0.31	1	0.31	0.014	0.90493
Error	1152.53	54	21.34		

A5.1.4.1.3.1.9. Open Field P49 1 min intervals 1st interval Mean velocity post hoc Newman Keuls test (running effect)

Cell No.	Newman-Keuls test; variable 1. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 21.343, df = 54.000 Running	{1} 17.113	{2} 14.428
1	0		0.026812
2	1	0.026812	

A5.1.4.1.3.2.1. Open Field P49 1 min Time bins 2nd Interval Data spreadsheet

	1 MS	2 Running	3 Lesion	4 2. Distance moved (cm)	5 2. Inner zone duration (s)	6 2. Inner Zone frequency	7 2. Velocity max (cm/s)	8 2. Velocity mean (cm/s)
164	1	1	0	470.784	4.33333	1	60.0247	9.41569
129	1	1	1	789.400	0	0	64.661	15.7880
148	1	0	0	1071.14	0	0	69.8556	21.4229
141	1	0	1	936.463	0	0	76.856	18.7292
207	0	1	1	85.4976	0	0	9.20432	1.70995
176	0	0	0	762.488	4.33333	1	59.4600	15.2497
174	0	1	0	701.686	0	0	73.2111	14.0337
227	0	0	1	567.017	0	0	56.8379	11.3403
122	1	1	0	951.888	1.33337	2	75.2234	19.0377
135	1	0	1	926.673	3.99998	1	79.1064	18.5334
197	1	0	0	874.881	3.99998	1	75.4438	17.4976
195	1	1	1	654.616	1.66666	1	67.2859	13.0923
154	1	0	1	525.187	0	0	61.9305	10.5037
203	0	1	1	847.171	3.83333	3	63.2881	16.9434
193	0	0	1	1097.28	8.00003	6	74.3075	21.9456
167	0	0	0	980.834	2.83333	3	71.978	19.6166
222	0	1	0	711.011	3.49999	3	70.3984	14.2202
182	1	1	1	1121.03	4.5	5	72.6793	22.4206
209	1	0	1	1034.75	0.33333	1	72.1719	20.695
144	1	0	0	1013.03	5.66666	5	85.2111	20.2606
216	1	1	0	938.724	5.66666	3	76.7850	18.774
188	0	1	1	961.619	7.16666	3	75.0339	19.2323
169	0	0	0	1033.80	5.83337	4	74.1831	20.6761
234	0	0	1	837.578	5.66668	4	67.2151	16.7515
117	0	0	1	738.704	3.16666	2	62.0075	14.774
126	0	0	1	1002.33	3.83333	2	76.6502	20.0466
138	1	1	0	781.559	3.8333	5	69.4146	15.6311
157	1	0	1	730.652	0	0	67.3802	14.6130
131	0	1	0	808.91	0.5	1	88.504	16.1783
191	0	1	1	686.88	2.33333	1	71.3417	13.737
160	0	0	0	741.443	4.33333	2	77.4514	14.8288
186	1	0	1	775.149	0	0	77.5440	15.5029

	1 MS	2 Running	3 Lesion	4 2. Distance moved (cm)	5 2. Inner zone duration (s)	6 2. Inner Zone frequency	7 2. Velocity max (cm/s)	8 2. Velocity mean (cm/s)
220	1	1	1	631.505	0.33333	1	62.9581	12.6301
190	1	0	0	839.246	0	0	89.9569	17.4843
143	1	0	1	1130.79	5.51074	2	291.527	23.5583
196	1	1	0	946.820	0.67204	2	264.029	19.7254
145	1	1	1	300.89	0	0	44.1514	6.26861
198	1	1	0	1036.78	0.73924	3	142.943	21.5997
139	1	0	0	990.152	0.84005	1	218.191	20.6282
210	0	1	1	979.112	3.29300	3	141.700	20.3982
232	0	1	0	962.730	5.17472	3	276.582	20.0569
171	0	0	0	780.630	1.74730	1	103.906	16.2631
219	0	0	0	868.467	9.91261	1	94.7424	18.0931
205	0	0	1	778.64	1.84811	1	265.290	16.221
137	0	1	1	843.141	0	0	89.8450	17.5654
250	1	0	0	896.462	3.66666	2	81.4672	17.9292
271	1	1	0	1100.43	12.1666	9	71.2901	22.0087
301	0	1	1	898.412	2.16670	3	72.4904	17.9682
305	0	1	0	785.728	2.16666	4	75.6081	15.7145
309	1	0	1	788.263	0	0	62.6719	15.7652
306	1	1	1	851.320	5.16666	2	68.7919	17.0264
312	0	1	1	1025.37	2.83331	4	73.522	20.5075
313	0	1	0	827.746	7.99999	4	70.138	16.5549
315	0	0	0	929.851	4.8333	4	76.6303	18.5970
314	0	1	0	822.459	6.3333	3	63.1130	16.4491
317	1	1	1	889.401	1.33333	1	58.7545	17.7880
319	1	1	0	797.817	1.99999	1	70.9989	15.9563
318	1	1	0	514.506	2	1	69.2114	10.2901
320	1	1	1	908.475	1.66666	1	66.7344	18.1695
322	0	0	1	903.830	5.50003	2	62.7178	18.0766
323	0	1	0	809.327	3.99999	3	67.4131	16.1865
324	0	1	0	963.082	6.49999	2	89.1189	19.2616

A5.1.4.1.3.2.2. Open field P49 1 min time-bins 2nd interval Descriptive statistics

	Descriptive Statistics (P49 1 min timebins spreadsheet)								
Effect	Level o Factor	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total				62	838.091	190.727	24.222	789.655	886.52
MS	0			31	830.413	182.924	32.854	763.316	897.51
MS	1			31	845.769	200.956	36.092	772.057	919.48
Running	0			28	876.992	149.066	28.170	819.190	934.79
Running	1			34	806.055	216.149	37.069	730.637	881.47
Lesion	0			31	861.756	146.076	26.236	808.175	915.33
Lesion	1			31	814.425	226.871	40.747	731.208	897.64
MS*Running	0	0		14	858.779	142.978	38.212	776.226	941.33
MS*Running	0	1		17	807.053	211.769	51.361	698.171	915.93
MS*Running	1	0		14	895.205	158.092	42.252	803.925	986.48
MS*Running	1	1		17	805.057	226.964	55.046	688.362	921.75
MS*Lesion	0	0		16	843.138	102.195	25.548	788.682	897.59
MS*Lesion	0	1		15	816.840	245.215	63.314	681.044	952.63
MS*Lesion	1	0		15	881.616	183.620	47.410	779.930	983.30
MS*Lesion	1	1		16	812.162	216.353	54.088	696.875	927.44
Running*Lesion	0	0		13	906.342	107.482	29.810	841.391	971.29
Running*Lesion	0	1		15	851.555	177.367	45.796	753.333	949.77
Running*Lesion	1	0		18	829.556	163.961	38.646	748.020	911.09
Running*Lesion	1	1		16	779.616	266.287	66.571	637.721	921.51
MS*Running*Les	0	0	0	7	871.074	114.575	43.305	765.109	977.04
MS*Running*Les	0	0	1	7	846.484	175.535	66.346	684.141	1008.82
MS*Running*Les	0	1	0	9	821.410	92.317	30.772	750.448	892.37
MS*Running*Les	0	1	1	8	790.901	303.648	107.355	537.045	1044.75
MS*Running*Les	1	0	0	6	947.487	90.553	36.968	852.457	1042.51
MS*Running*Les	1	0	1	8	855.993	190.942	67.508	696.361	1015.62
MS*Running*Les	1	1	0	9	837.702	220.125	73.375	668.499	1006.90
MS*Running*Les	1	1	1	8	768.330	243.832	86.207	564.481	972.18

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total				62	3.08179	2.74267	0.34832	2.38528	3.77830
MS	0			31	3.85943	2.57184	0.46191	2.91607	4.80279
MS	1			31	2.30415	2.72600	0.48960	1.30424	3.30406
Running	0			28	3.06639	2.75041	0.51978	1.99989	4.13289
Running	1			34	3.09448	2.77760	0.47635	2.12533	4.06363
Lesion	0			31	3.77159	2.92286	0.52496	2.69947	4.84370
Lesion	1			31	2.39199	2.40182	0.43138	1.51100	3.27299
MS*Running	0	0		14	4.41725	2.56629	0.68587	2.93551	5.89898
MS*Running	0	1		17	3.40006	2.56017	0.62093	2.08374	4.71638
MS*Running	1	0		14	1.71553	2.27930	0.60916	0.39950	3.03156
MS*Running	1	1		17	2.78890	3.02644	0.73402	1.23284	4.34495
MS*Lesion	0	0		16	4.37508	2.63763	0.65941	2.96958	5.78058
MS*Lesion	0	1		15	3.30941	2.46812	0.63726	1.94261	4.67621
MS*Lesion	1	0		15	3.12786	3.16108	0.81618	1.37731	4.87842
MS*Lesion	1	1		16	1.53192	2.05458	0.51364	0.43711	2.62673
Running*Lesion	0	0		13	3.69230	2.72818	0.75666	2.04368	5.34093
Running*Lesion	0	1		15	2.52393	2.74416	0.70854	1.00426	4.04359
Running*Lesion	1	0		18	3.82885	3.13273	0.73839	2.27098	5.38672
Running*Lesion	1	1		16	2.26831	2.11551	0.52887	1.14103	3.39559
MS*Running*Lesi	0	0	0	7	4.83237	2.60840	0.98588	2.42000	7.24474
MS*Running*Lesi	0	0	1	7	4.00212	2.65772	1.00452	1.54413	6.46011
MS*Running*Lesi	0	1	0	9	4.01941	2.75980	0.91993	1.89804	6.14078
MS*Running*Lesi	0	1	1	8	2.70329	2.28672	0.80847	0.79154	4.61504
MS*Running*Lesi	1	0	0	6	2.36223	2.39918	0.97946	-0.15555	4.88001
MS*Running*Lesi	1	0	1	8	1.23050	2.21572	0.78337	-0.62188	3.08290
MS*Running*Lesi	1	1	0	9	3.63829	3.62719	1.20906	0.85018	6.42640
MS*Running*Lesi	1	1	1	8	1.83333	1.98206	0.70076	0.17628	3.49037

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total				62	2.00000	1.79251	0.22765	1.54478	2.45521
MS	0			31	2.35483	1.49551	0.26860	1.80628	2.90339
MS	1			31	1.64516	2.00911	0.36084	0.90821	2.38211
Running	0			28	1.64285	1.66030	0.31376	0.99905	2.28665
Running	1			34	2.29411	1.86725	0.32023	1.64260	2.94563
Lesion	0			31	2.41935	1.87570	0.33688	1.73134	3.10737
Lesion	1			31	1.58064	1.62837	0.29246	0.98335	2.17793
MS*Running	0	0		14	2.35714	1.64584	0.43986	1.40686	3.30742
MS*Running	0	1		17	2.35294	1.41161	0.34236	1.62715	3.07872
MS*Running	1	0		14	0.92857	1.38476	0.37009	0.12903	1.72811
MS*Running	1	1		17	2.23529	2.27841	0.55259	1.06384	3.40674
MS*Lesion	0	0		16	2.43750	1.31497	0.32874	1.73679	3.13820
MS*Lesion	0	1		15	2.26666	1.70991	0.44149	1.31974	3.21358
MS*Lesion	1	0		15	2.40000	2.38447	0.61566	1.07952	3.72047
MS*Lesion	1	1		16	0.93750	1.28938	0.32234	0.25043	1.62456
Running*Lesion	0	0		13	1.92307	1.60528	0.44522	0.95301	2.89313
Running*Lesion	0	1		15	1.40000	1.72378	0.44507	0.44540	2.35459
Running*Lesion	1	0		18	2.77777	2.01627	0.47524	1.77510	3.78044
Running*Lesion	1	1		16	1.75000	1.57056	0.39264	0.91310	2.58689
MS*Running*Les	0	0	0	7	2.28571	1.38013	0.52164	1.00930	3.56212
MS*Running*Les	0	0	1	7	2.42857	1.98806	0.75141	0.58992	4.26722
MS*Running*Les	0	1	0	9	2.55555	1.33333	0.44444	1.53066	3.58044
MS*Running*Les	0	1	1	8	2.12500	1.55264	0.54894	0.82695	3.42304
MS*Running*Les	1	0	0	6	1.50000	1.87082	0.76376	-0.46331	3.46331
MS*Running*Les	1	0	1	8	0.50000	0.75592	0.26726	-0.13197	1.13197
MS*Running*Les	1	1	0	9	3.00000	2.59807	0.86602	1.00294	4.99705
MS*Running*Les	1	1	1	8	1.37500	1.59799	0.56497	0.03904	2.71095

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total				62	88.857	55.4320	7.0398	74.7801	102.934
MS	0			31	86.899	53.0538	9.5287	67.4395	106.360
MS	1			31	90.814	58.5253	10.5114	69.3473	112.281
Running	0			28	94.024	59.7757	11.2965	70.8462	117.203
Running	1			34	84.601	52.1062	8.9361	66.4208	102.782
Lesion	0			31	95.241	55.2627	9.9254	74.9710	115.512
Lesion	1			31	82.472	55.7641	10.0155	62.0184	102.927
MS*Running	0	0		14	87.384	52.8146	14.1153	56.8899	117.878
MS*Running	0	1		17	86.500	54.8710	13.3081	58.2888	114.712
MS*Running	1	0		14	100.665	67.3556	18.0015	61.7754	139.555
MS*Running	1	1		17	82.702	50.8066	12.3224	56.5798	108.824
MS*Lesion	0	0		16	89.527	51.2333	12.8083	62.2271	116.827
MS*Lesion	0	1		15	84.096	56.5938	14.6124	52.7563	115.437
MS*Lesion	1	0		15	101.336	60.4545	15.6092	67.8579	134.815
MS*Lesion	1	1		16	80.950	56.7876	14.1969	50.6904	111.210
Running*Lesion	0	0		13	90.652	40.0007	11.0942	66.4800	114.824
Running*Lesion	0	1		15	96.947	74.1611	19.1483	55.8787	138.016
Running*Lesion	1	0		18	98.556	65.0550	15.3336	66.2049	130.907
Running*Lesion	1	1		16	68.902	26.0791	6.5197	55.0061	82.799
MS*Running*Lesi	0	0	0	7	79.764	14.8684	5.6197	66.0136	93.515
MS*Running*Lesi	0	0	1	7	95.003	75.4130	28.5034	25.2583	164.749
MS*Running*Lesi	0	1	0	9	97.120	67.8788	22.6262	44.9445	149.297
MS*Running*Lesi	0	1	1	8	74.553	36.1660	12.7866	44.3178	104.789
MS*Running*Lesi	1	0	0	6	103.354	56.7034	23.1491	43.8477	162.861
MS*Running*Lesi	1	0	1	8	98.648	78.2174	27.6540	33.2573	164.040
MS*Running*Lesi	1	1	0	9	99.991	66.1903	22.0634	49.1128	150.869
MS*Running*Lesi	1	1	1	8	63.252	8.7431	3.0911	55.9426	70.561

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total				62	16.9024	3.88485	0.49337	15.9158	17.8889
MS	0			31	16.7484	3.70593	0.66560	15.3890	18.1077
MS	1			31	17.0563	4.11149	0.73844	15.5482	18.5644
Running	0			28	17.7002	3.04064	0.57462	16.5211	18.8792
Running	1			34	16.2453	4.39865	0.75436	14.7106	17.7801
Lesion	0			31	17.4078	3.01624	0.54173	16.3015	18.5142
Lesion	1			31	16.3969	4.58928	0.82426	14.7135	18.0802
MS*Running	0	0		14	17.3201	2.82224	0.75427	15.6905	18.9496
MS*Running	0	1		17	16.2776	4.33105	1.05043	14.0507	18.5044
MS*Running	1	0		14	18.0803	3.30544	0.88341	16.1718	19.9888
MS*Running	1	1		17	16.2131	4.59841	1.11527	13.8488	18.5774
MS*Lesion	0	0		16	16.9988	2.11191	0.52797	15.8734	18.1241
MS*Lesion	0	1		15	16.4813	4.95005	1.27809	13.7400	19.2225
MS*Lesion	1	0		15	17.8441	3.78433	0.97711	15.7484	19.9398
MS*Lesion	1	1		16	16.3178	4.38632	1.09658	13.9805	18.6551
Running*Lesion	0	0		13	18.3498	2.11037	0.58531	17.0745	19.6251
Running*Lesion	0	1		15	17.1372	3.64441	0.94098	15.1190	19.1554
Running*Lesion	1	0		18	16.7275	3.42672	0.80768	15.0234	18.4316
Running*Lesion	1	1		16	15.7029	5.35397	1.33849	12.8499	18.5558
MS*Running*Lesi	0	0	0	7	17.6178	2.22689	0.84168	15.5582	19.6773
MS*Running*Lesi	0	0	1	7	17.0223	3.47732	1.31430	13.8064	20.2383
MS*Running*Lesi	0	1	0	9	16.5173	2.01182	0.67061	14.9709	18.0637
MS*Running*Lesi	0	1	1	8	16.0078	6.17192	2.18210	10.8480	21.1677
MS*Running*Lesi	1	0	0	6	19.2038	1.76423	0.72024	17.3524	21.0553
MS*Running*Lesi	1	0	1	8	17.2376	4.02174	1.42190	13.8754	20.5999
MS*Running*Lesi	1	1	0	9	16.9377	4.56134	1.52044	13.4315	20.4438
MS*Running*Lesi	1	1	1	8	15.3979	4.80830	1.69999	11.3781	19.4178

A5.1.4.1.3.2.3. Open Field P49 1 min intervals 2nd interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 2. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	4327284	1	4327284	1124.90	0.00000
MS	6043	1	6043	0.157	0.69340
Running	8729	1	8729	2.269	0.13779
Lesion	4443	1	4443	1.155	0.28725
MS*Running	809	1	809	0.211	0.64818
MS*Lesion	1065	1	1065	0.277	0.60079
Running*Lesion	250	1	250	0.007	0.93602
MS*Running*Lesion	749	1	749	0.019	0.88953
Error	207727	54	3846		

A5.1.4.1.3.2.4. Open Field P49 1 min intervals 2nd interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 2. Inner zone duration (s) (P49 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	577.572	1	577.572	82.8086	0.00000
MS	40.164	1	40.164	5.7585	0.01988
Running	0.051	1	0.051	0.0074	0.93172
Lesion	24.616	1	24.616	3.5293	0.06569
MS*Running	15.172	1	15.172	2.1754	0.14604
MS*Lesion	0.595	1	0.595	0.0853	0.77133
Running*Lesion	1.280	1	1.280	0.1835	0.67006
MS*Running*Lesion	0.033	1	0.033	0.0048	0.94504
Error	376.638	54	6.974		

A5.1.4.1.3.2.5. Open Field P49 1 min intervals 2nd interval Inner Zone duration post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 2. Inner zone duration (s) (P49 1 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 6.9748, df = 54.000		
	MS	{1} 3.8594	{2} 2.3042
1	0		0.024341
2	1	0.024341	

A5.1.4.1.3.2.6. Open Field P49 1 min intervals 2nd interval Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 2. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	236.935	1	236.935	80.1584	0.00000
MS	8.688	1	8.688	2.9394	0.09217
Running	5.222	1	5.222	1.7668	0.18936
Lesion	8.082	1	8.082	2.7345	0.10400
MS*Running	5.527	1	5.527	1.8701	0.17712
MS*Lesion	5.204	1	5.204	1.7608	0.19010
Running*Lesion	1.368	1	1.368	0.4629	0.49916
MS*Running*Lesion	0.002	1	0.002	0.0008	0.97674
Error	159.615	54	2.955		

A5.1.4.1.3.2.7. Open Field P49 1 min intervals 2nd interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	482564.8	1	482564.8	148.100	0.00000
MS	336.9	1	336.9	0.103	0.74904
Running	1669.0	1	1669.0	0.512	0.47726
Lesion	2266.4	1	2266.4	0.695	0.40795
MS*Running	1211.9	1	1211.9	0.371	0.54450
MS*Lesion	1108.9	1	1108.9	0.340	0.56206
Running*Lesion	4647.1	1	4647.1	1.426	0.23760
MS*Running*Lesion	31.8	1	31.8	0.009	0.92172
Error	175952.0	54	3258.4		

A5.1.4.1.3.2.8. Open Field P49 1 min intervals 2nd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	17607.04	1	17607.04	1107.61	0.00000
MS	2.48	1	2.48	0.156	0.69470
Running	36.87	1	36.87	2.319	0.13360
Lesion	20.26	1	20.26	1.274	0.26396
MS*Running	3.78	1	3.78	0.238	0.62796
MS*Lesion	5.49	1	5.49	0.346	0.55911
Running*Lesion	0.25	1	0.25	0.016	0.90064
MS*Running*Lesion	0.11	1	0.11	0.007	0.93388
Error	858.40	54	15.90		

A5.1.4.1.3.3.1. Open Field P49 1 min Intervals 3rd Interval Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 3. Distance moved (cm)	5 3. Inner zone duration (s)	6 3. Inner Zone frequency	7 3. Velocity max (cm/s)	8 3. Velocity mean (cm/s)
164	1	1	0	734.319	0	0	58.8783	14.686
129	1	1	1	947.553	2.83333	2	58.6560	18.9510
148	1	0	0	942.209	3.66666	2	81.4781	18.844
141	1	0	1	578.972	0.66666	2	84.2187	11.5794
207	0	1	1	75.6264	0	0	16.6092	1.5125
176	0	0	0	629.807	4.66665	1	67.3035	12.5961
174	0	1	0	536.521	1.33333	2	68.4662	10.7304
227	0	0	1	268.333	0	0	51.2823	5.36667
122	1	1	0	694.838	2.49995	1	71.6399	13.8967
135	1	0	1	1049.39	0	0	78.9362	20.9879
197	1	0	0	992.487	0	0	78.7255	19.8497
195	1	1	1	541.449	6.66666	1	71.7200	10.8289
154	1	0	1	829.076	0	0	64.7037	16.5815
203	0	1	1	652.386	4.16672	2	70.5258	13.0477
193	0	0	1	994.049	18.6666	6	72.0741	19.8809
167	0	0	0	883.991	7.83333	5	80.2647	17.6798
222	0	1	0	633.601	0.33333	2	72.6443	12.6720
182	1	1	1	980.557	4.33333	1	68.9568	19.6111
209	1	0	1	889.426	7.33333	4	77.1975	17.7885
144	1	0	0	852.059	3.49999	3	74.6515	17.0411
216	1	1	0	878.273	13.8333	6	83.843	17.5654
188	0	1	1	712.446	5.16666	3	61.0659	14.2489
169	0	0	0	953.990	9.49995	3	78.0911	19.0798
234	0	0	1	925.030	6.16668	3	67.2733	18.5006
117	0	0	1	802.49	2.99999	2	57.6803	16.0498
126	0	0	1	935.062	2.5	2	78.56	18.7012
138	1	1	0	775.724	5.99998	3	73.231	15.5144
157	1	0	1	924.024	2.99999	1	71.0069	18.480
131	0	1	0	686.69	4.16665	2	71.896	13.7339
191	0	1	1	705.133	0	0	70.197	14.1026
160	0	0	0	719.714	1.5000	2	70.5598	14.394
186	1	0	1	916.714	3.33333	2	83.4506	18.334

	1 MS	2 Running	3 Lesion	4 3. Distance moved (cm)	5 3. Inner zone duration (s)	6 3. Inner Zone frequency	7 3. Velocity max (cm/s)	8 3. Velocity mean (cm/s)
220	1	1	1	701.268	1.66666	2	65.272	14.0253
190	1	0	0	482.792	0	0	75.5166	10.058
143	1	0	1	781.135	2.85617	2	307.634	16.2736
196	1	1	0	798.147	0.40322	1	193.939	16.6281
145	1	1	1	323.923	0	0	60.6058	6.74841
198	1	1	0	983.587	3.96504	6	253.509	20.4914
139	1	0	0	760.754	0.8067	2	169.462	15.8490
210	0	1	1	764.960	2.45295	1	161.330	15.9367
232	0	1	0	614.22	0	0	76.8154	12.7963
171	0	0	0	687.430	0.87365	1	139.378	14.3214
219	0	0	0	623.092	0	0	89.9304	12.9811
205	0	0	1	653.214	0.77284	1	106.375	13.6086
137	0	1	1	650.572	0	0	78.014	13.5536
250	1	0	0	479.953	1.16666	1	57.5670	9.59907
271	1	1	0	879.82	13.1666	4	70.7562	17.5965
301	0	1	1	694.16	2.83335	2	56.0509	13.883
305	0	1	0	640.449	0	0	70.6997	12.8089
309	1	0	1	985.957	13.3333	7	107.442	19.7191
306	1	1	1	875.595	9.00005	7	88.6134	17.5119
312	0	1	1	947.056	4.49999	5	76.7692	18.9411
313	0	1	0	693.898	0.83333	1	67.7268	13.8779
315	0	0	0	796.06	5.16666	4	75.4730	15.9212
314	0	1	0	563.316	4.83333	2	64.2866	11.2663
317	1	1	1	747.193	0.66672	1	65.7754	14.9438
319	1	1	0	788.837	3.66666	3	73.4223	15.7767
318	1	1	0	532.96	0	0	72.342	10.6593
320	1	1	1	510.149	4.33333	2	67.8765	10.2029
322	0	0	1	738.297	0.66662	1	69.641	14.7659
323	0	1	0	737.49	6.83333	4	70.6087	14.7498
324	0	1	0	630.146	1.83333	1	70.1134	12.6029

A5.1.4.1.3.3.2. Open Field P49 1 min time-bins 3rd Interval Descriptive stats

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Distance moved (cm) Mean	3. Distance moved (cm) Std.Dev.	3. Distance moved (cm) Std.Err	3. Distance moved (cm) -95.00%	3. Distance moved (cm) +95.00%
Total				62	737.232	188.484	23.9375	689.366	785.098
MS	0			31	695.137	186.041	33.4140	626.896	763.378
MS	1			31	779.328	184.291	33.0997	711.729	846.926
Running	0			28	788.411	186.027	35.1559	716.277	860.545
Running	1			34	695.085	182.491	31.2970	631.411	758.759
Lesion	0			31	729.265	144.127	25.8860	676.398	782.131
Lesion	1			31	745.200	226.568	40.6928	662.094	828.306
MS*Running	0	0		14	757.897	189.108	50.5412	648.709	867.085
MS*Running	0	1		17	643.452	171.916	41.6958	555.061	731.843
MS*Running	1	0		14	818.925	184.681	49.3582	712.293	925.557
MS*Running	1	1		17	746.718	182.940	44.3695	652.659	840.777
MS*Lesion	0	0		16	689.402	110.876	27.7190	630.320	748.483
MS*Lesion	0	1		15	701.254	246.816	63.7276	564.572	837.937
MS*Lesion	1	0		15	771.785	166.097	42.8861	679.803	863.766
MS*Lesion	1	1		16	786.399	205.103	51.2758	677.107	895.691
Running*Lesion	0	0		13	754.180	170.158	47.1933	651.354	857.005
Running*Lesion	0	1		15	818.078	199.730	51.5700	707.472	928.685
Running*Lesion	1	0		18	711.270	124.105	29.2520	649.554	772.987
Running*Lesion	1	1		16	676.877	234.825	58.7063	551.747	802.006
MS*Running*Lesi	0	0	0	7	756.298	127.012	48.0063	638.830	873.765
MS*Running*Lesi	0	0	1	7	759.497	247.680	93.6145	530.430	988.563
MS*Running*Lesi	0	1	0	9	637.372	63.165	21.0552	588.818	685.925
MS*Running*Lesi	0	1	1	8	650.292	250.786	88.6665	440.629	859.955
MS*Running*Lesi	1	0	0	6	751.709	223.867	91.3936	516.774	986.644
MS*Running*Lesi	1	0	1	8	869.337	144.109	50.9502	748.859	989.816
MS*Running*Lesi	1	1	0	9	785.169	128.268	42.7560	686.573	883.764
MS*Running*Lesi	1	1	1	8	703.461	231.633	81.8947	509.811	897.111

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Inner zone duration (s) Mean	3. Inner zone duration (s) Std.Dev.	3. Inner zone duration (s) Std.Err	3. Inner zone duration (s) -95.00%	3. Inner zone duration (s) +95.00%
Total				62	3.44028	3.93032	0.49915	2.4421	4.4384
MS	0			31	3.24514	3.87775	0.69646	1.8227	4.6675
MS	1			31	3.63541	4.03659	0.72499	2.1547	5.1160
Running	0			28	3.60628	4.42921	0.83704	1.8888	5.3237
Running	1			34	3.30356	3.52996	0.60538	2.0719	4.5352
Lesion	0			31	3.30264	3.75203	0.67388	1.9263	4.6789
Lesion	1			31	3.57791	4.15847	0.74688	2.0525	5.1032
MS*Running	0	0		14	4.37950	5.09401	1.36143	1.4383	7.3207
MS*Running	0	1		17	2.31096	2.24892	0.54544	1.1546	3.4672
MS*Running	1	0		14	2.83306	3.67535	0.98228	0.7109	4.9551
MS*Running	1	1		17	4.29617	4.30682	1.04455	2.0818	6.5105
MS*Lesion	0	0		16	3.10668	3.07715	0.76928	1.4669	4.7463
MS*Lesion	0	1		15	3.39283	4.69379	1.21193	0.7935	5.9921
MS*Lesion	1	0		15	3.51166	4.46438	1.15269	1.0393	5.9839
MS*Lesion	1	1		16	3.75143	3.73584	0.93396	1.7607	5.7421
Running*Lesion	0	0		13	2.97541	3.10526	0.86124	1.0989	4.8519
Running*Lesion	0	1		15	4.15304	5.37397	1.38755	1.1770	7.1290
Running*Lesion	1	0		18	3.53897	4.23030	0.99709	1.4352	5.6426
Running*Lesion	1	1		16	3.03873	2.64397	0.66099	1.6298	4.4476
MS*Running*Les	0	0	0	7	4.22004	3.61557	1.36655	0.8762	7.5639
MS*Running*Les	0	0	1	7	4.53896	6.56438	2.48110	-1.5320	10.6100
MS*Running*Les	0	1	0	9	2.24074	2.45389	0.81796	0.3545	4.1269
MS*Running*Les	0	1	1	8	2.38996	2.15987	0.76363	0.5842	4.1956
MS*Running*Les	1	0	0	6	1.52334	1.66029	0.67781	-0.2190	3.2657
MS*Running*Les	1	0	1	8	3.81535	4.53263	1.60252	0.0259	7.6047
MS*Running*Les	1	1	0	9	4.83720	5.31169	1.77056	0.7542	8.9201

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Inner Zone frequency Mean	3. Inner Zone frequency Std.Dev.	3. Inner Zone frequency Std.Err	3. Inner Zone frequency -95.00%	3. Inner Zone frequency +95.00%
Total				62	2.00000	1.84657	0.23451	1.53105	2.46894
MS	0			31	1.87096	1.62771	0.29234	1.27391	2.46801
MS	1			31	2.12903	2.06142	0.37024	1.37289	2.88516
Running	0			28	2.03571	1.83549	0.34687	1.32398	2.74744
Running	1			34	1.97058	1.88270	0.32288	1.31368	2.62749
Lesion	0			31	2.00000	1.75119	0.31452	1.35765	2.64234
Lesion	1			31	2.00000	1.96638	0.35317	1.27872	2.72127
MS*Running	0	0		14	2.21428	1.80506	0.48242	1.17207	3.25649
MS*Running	0	1		17	1.58823	1.46025	0.35416	0.83744	2.33903
MS*Running	1	0		14	1.85714	1.91581	0.51202	0.75098	2.96329
MS*Running	1	1		17	2.35294	2.20627	0.53510	1.21858	3.48730
MS*Lesion	0	0		16	1.87500	1.50000	0.37500	1.07570	2.67429
MS*Lesion	0	1		15	1.86666	1.80739	0.46666	0.86576	2.86756
MS*Lesion	1	0		15	2.13333	2.03071	0.52432	1.00876	3.25790
MS*Lesion	1	1		16	2.12500	2.15638	0.53909	0.97594	3.27405
Running*Lesion	0	0		13	1.84615	1.57301	0.43627	0.89559	2.79671
Running*Lesion	0	1		15	2.20000	2.07708	0.53630	1.04974	3.35025
Running*Lesion	1	0		18	2.11111	1.90630	0.44932	1.16312	3.05909
Running*Lesion	1	1		16	1.81250	1.90503	0.47625	0.79737	2.82762
MS*Running*Lesi	0	0	0	7	2.28571	1.79947	0.68013	0.62148	3.94994
MS*Running*Lesi	0	0	1	7	2.14285	1.95180	0.73771	0.33774	3.94797
MS*Running*Lesi	0	1	0	9	1.55555	1.23603	0.41201	0.60545	2.50565
MS*Running*Lesi	0	1	1	8	1.62500	1.76776	0.62500	0.14711	3.10289
MS*Running*Lesi	1	0	0	6	1.33333	1.21106	0.49441	0.06240	2.60426
MS*Running*Lesi	1	0	1	8	2.25000	2.31455	0.81831	0.31498	4.18501
MS*Running*Lesi	1	1	0	9	2.66666	2.34520	0.78173	0.86398	4.46935
MS*Running*Lesi	1	1	1	8	2.00000	2.13809	0.75592	0.21251	3.78748

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Velocity max (cm/s) Mean	3. Velocity max (cm/s) Std.Dev.	3. Velocity max (cm/s) Std.Err	3. Velocity max (cm/s) -95.00%	3. Velocity max (cm/s) +95.00%
Total				62	84.495	45.2125	5.7420	73.0140	95.977
MS	0			31	75.087	24.6318	4.4240	66.0524	84.122
MS	1			31	93.904	58.0243	10.4214	72.6207	115.187
Running	0			28	89.852	49.0717	9.2736	70.8249	108.881
Running	1			34	80.084	42.0001	7.2029	65.4295	94.738
Lesion	0			31	87.845	42.9475	7.7136	72.0926	103.599
Lesion	1			31	81.145	47.8414	8.5925	63.5973	98.694
MS*Running	0	0		14	78.849	21.8968	5.8521	66.2063	91.492
MS*Running	0	1		17	71.989	26.9344	6.5325	58.1410	85.837
MS*Running	1	0		14	100.856	65.2766	17.4459	63.1670	138.546
MS*Running	1	1		17	88.178	52.6647	12.7730	61.1010	115.256
MS*Lesion	0	0		16	77.141	17.7033	4.4258	67.7077	86.574
MS*Lesion	0	1		15	72.896	30.8929	7.9765	55.7888	90.004
MS*Lesion	1	0		15	99.264	57.8449	14.9354	67.2308	131.297
MS*Lesion	1	1		16	88.879	59.6239	14.9060	57.1078	120.650
Running*Lesion	0	0		13	87.569	31.2429	8.6652	68.6895	106.449
Running*Lesion	0	1		15	91.831	61.6307	15.9130	57.7019	125.961
Running*Lesion	1	0		18	88.045	50.6543	11.9393	62.8557	113.235
Running*Lesion	1	1		16	71.127	28.4821	7.1205	55.9505	86.304
MS*Running*Les	0	0	0	7	85.857	24.6941	9.3335	63.0191	108.695
MS*Running*Les	0	0	1	7	71.841	17.7329	6.7024	55.4408	88.241
MS*Running*Les	0	1	0	9	70.361	3.4802	1.1600	67.6868	73.037
MS*Running*Les	0	1	1	8	73.820	40.4614	14.3052	39.9939	107.647
MS*Running*Les	1	0	0	6	89.567	40.0254	16.3403	47.5628	131.571
MS*Running*Les	1	0	1	8	109.323	81.1040	28.6745	41.5192	177.128
MS*Running*Les	1	1	0	9	105.729	68.8239	22.9413	52.8264	158.632
MS*Running*Les	1	1	1	8	68.434	9.2005	3.2528	60.7427	76.126

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Velocity mean (cm/s) Mean	3. Velocity mean (cm/s) Std.Dev.	3. Velocity mean (cm/s) Std.Err	3. Velocity mean (cm/s) -95.00%	3. Velocity mean (cm/s) +95.00%
Total				62	14.8538	3.76346	0.47796	13.8981	15.8096
MS	0			31	14.0101	3.71218	0.66672	12.6484	15.3717
MS	1			31	15.6976	3.68074	0.66108	14.3475	17.0477
Running	0			28	15.8869	3.65520	0.69076	14.4696	17.3042
Running	1			34	14.0030	3.68763	0.63242	12.7164	15.2897
Lesion	0			31	14.7183	2.90256	0.52131	13.6537	15.7830
Lesion	1			31	14.9893	4.50962	0.80995	13.3352	16.6434
MS*Running	0	0		14	15.2748	3.72073	0.99440	13.1265	17.4231
MS*Running	0	1		17	12.9685	3.46953	0.84148	11.1846	14.7524
MS*Running	1	0		14	16.4990	3.61911	0.96724	14.4094	18.5886
MS*Running	1	1		17	15.0376	3.70612	0.89886	13.1320	16.9431
MS*Lesion	0	0		16	13.8883	2.18324	0.54581	12.7249	15.0516
MS*Lesion	0	1		15	14.1400	4.93833	1.27507	11.4052	16.8748
MS*Lesion	1	0		15	15.6037	3.36435	0.86867	13.7406	17.4669
MS*Lesion	1	1		16	15.7855	4.06380	1.01595	13.6201	17.9510
Running*Lesion	0	0		13	15.2473	3.30830	0.91755	13.2481	17.2465
Running*Lesion	0	1		15	16.4412	3.95933	1.02229	14.2486	18.6338
Running*Lesion	1	0		18	14.3363	2.60252	0.61342	13.0421	15.6305
Running*Lesion	1	1		16	13.6281	4.68589	1.17147	11.1312	16.1250
MS*Running*Lesi	0	0	0	7	15.2819	2.40831	0.91025	13.0546	17.5093
MS*Running*Lesi	0	0	1	7	15.2677	4.91883	1.85914	10.7185	19.8168
MS*Running*Lesi	0	1	0	9	12.8043	1.25133	0.41711	11.8424	13.7661
MS*Running*Lesi	0	1	1	8	13.1533	5.06472	1.79065	8.9191	17.3875
MS*Running*Lesi	1	0	0	6	15.2069	4.39363	1.79369	10.5960	19.8177
MS*Running*Lesi	1	0	1	8	17.4681	2.83405	1.00198	15.0988	19.8374
MS*Running*Lesi	1	1	0	9	15.8683	2.74701	0.91567	13.7568	17.9799
MS*Running*Lesi	1	1	1	8	14.1029	4.57003	1.61575	10.2823	17.9236

A5.1.4.1.3.3.3. Open Field P49 1 min intervals 3rd interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 3. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	3331278	1	3331278	977.551	0.00000
MS	89338	1	89338	2.621	0.11124
Running	12385	1	12385	3.634	0.06192
Lesion	258	1	258	0.075	0.78424
MS*Running	872	1	872	0.256	0.61485
MS*Lesion	374	1	374	0.011	0.91700
Running*Lesion	3425	1	3425	1.005	0.32053
MS*Running*Lesion	4164	1	4164	1.221	0.27388
Error	184020	54	3407		

A5.1.4.1.3.3.4. Open Field P49 1 min intervals 3rd interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 3. Inner zone duration (s) (P49 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	707.632	1	707.632	44.0950	0.00000
MS	0.213	1	0.213	0.0133	0.90853
Running	0.846	1	0.846	0.0527	0.81927
Lesion	2.471	1	2.471	0.1539	0.69630
MS*Running	50.971	1	50.971	3.1761	0.08034
MS*Lesion	0.433	1	0.433	0.0269	0.87013
Running*Lesion	12.425	1	12.425	0.7743	0.38279
MS*Running*Lesion	10.200	1	10.200	0.6356	0.42880
Error	866.587	54	16.047		

A5.1.4.1.3.3.5. Open Field P49 1 min intervals 3rd interval Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 3. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	239.625	1	239.625	65.6121	0.00000
MS	0.391	1	0.391	0.1071	0.74468
Running	0.025	1	0.025	0.0070	0.93327
Lesion	0.029	1	0.029	0.0081	0.92846
MS*Running	5.178	1	5.178	1.4178	0.23896
MS*Lesion	0.099	1	0.099	0.0272	0.86941
Running*Lesion	1.790	1	1.790	0.4903	0.48677
MS*Running*Lesion	3.071	1	3.071	0.8411	0.36315
Error	197.216	54	3.652		

A5.1.4.1.3.3.6. Open Field P49 1 min intervals 3rd interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 3. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	434009.7	1	434009.7	213.751	0.00000
MS	4826.3	1	4826.3	2.377(	0.12897
Running	1393.4	1	1393.4	0.686(	0.41108
Lesion	752.(	1	752.(	0.370	0.54534
MS*Running	119.7	1	119.7	0.059(	0.80904
MS*Lesion	46.4	1	46.4	0.022	0.88038
Running*Lesion	1492.3	1	1492.3	0.735(	0.39506
MS*Running*Lesion	5291.7	1	5291.7	2.606	0.11227
Error	109644.(	54	2030.4		

A5.1.4.1.3.3.7. Open Field P49 1 min intervals 3rd interval mean velocity ANOVA

Effect	Univariate Tests of Significance for 3. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	13526.6	1	13526.6	998.734	0.00000
MS	35.91	1	35.91	2.651	0.10929
Running	50.71	1	50.71	3.744	0.05823
Lesion	0.66	1	0.66	0.048	0.82648
MS*Running	3.4(	1	3.4(	0.250	0.61851
MS*Lesion	0.02	1	0.02	0.001	0.96607
Running*Lesion	12.79	1	12.79	0.944(	0.33557
MS*Running*Lesion	18.36	1	18.36	1.355(	0.24941
Error	731.36	54	13.54		

A5.1.4.1.3.4.1. Open Field P49 1min intervals 4th Interval Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 4. Distance moved (cm)	5 4. Inner zone duration (s)	6 4. Inner Zone frequency	7 4. Velocity max (cm/s)	8 4. Velocity mean (cm/s)
164	1	1	0	577.845	4.33333	3	61.3780	11.5569
129	1	1	1	680.588	0	0	61.9916	13.6117
148	1	0	0	905.611	5.33333	3	78.0301	18.1122
141	1	0	1	907.027	0	0	79.152	18.1405
207	0	1	1	36.650	0	0	4.24595	0.73301
176	0	0	0	467.885	1	1	64.1246	9.35771
174	0	1	0	507.58	0	0	64.5859	10.1517
227	0	0	1	522.360	0	0	61.0181	10.4472
122	1	1	0	474.953	3.66666	1	58.8977	9.49907
135	1	0	1	967.310	0	0	88.8928	19.3462
197	1	0	0	881.341	0	0	83.4163	17.6268
195	1	1	1	664.400	3.33333	3	78.7503	13.2880
154	1	0	1	798.959	0	0	74.0578	15.979
203	0	1	1	451.541	7.66660	2	64.2458	9.03083
193	0	0	1	959.769	8.16666	4	60.3412	19.195
167	0	0	0	871.341	5.3333	3	84.8799	17.4268
222	0	1	0	855.720	11.8334	4	75.0427	17.1144
182	1	1	1	970.878	3.66666	2	63.0713	19.4175
209	1	0	1	896.281	4.33341	2	69.9537	17.9256
144	1	0	0	809.927	10.9999	3	72.0137	16.1985
216	1	1	0	712.078	3.66674	3	82.3273	14.2415
188	0	1	1	738.37	1.83333	1	73.9977	14.7674
169	0	0	0	775.736	11.6667	7	78.3915	15.5147
234	0	0	1	751.825	3.83327	4	79.720	15.0365
117	0	0	1	641.314	2.83333	2	56.1866	12.826
126	0	0	1	783.75	2.49998	3	74.5225	15.6751
138	1	1	0	826.350	8.8333	3	81.2186	16.5270
157	1	0	1	823.437	2.99999	1	66.1011	16.4687
131	0	1	0	756.704	2.66666	2	68.0491	15.134
191	0	1	1	900.068	5.8333	3	78.1564	18.0013
160	0	0	0	508.82	2.83327	1	79.1416	10.1764
186	1	0	1	819.162	4.16674	3	71.0190	16.3832

	1 MS	2 Running	3 Lesion	4 4. Distance moved (cm)	5 4. Inner zone duration (s)	6 4. Inner Zone frequency	7 4. Velocity max (cm/s)	8 4. Velocity mean (cm/s)
220	1	1	1	749.717	1.33333	1	70.3563	14.9943
190	1	0	0	759.798	0.84005	1	88.9689	15.8291
143	1	0	1	574.507	1.14247	1	192.062	11.9689
196	1	1	0	503.277	0	0	86.1389	10.4849
145	1	1	1	130.466	0	0	21.6786	2.71806
198	1	1	0	901.294	5.94796	6	270.899	18.7770
139	1	0	0	826.850	3.93114	2	301.254	17.2260
210	0	1	1	527.454	2.01612	2	245.751	10.9886
232	0	1	0	436.173	0	0	77.8154	9.08696
171	0	0	0	704.142	0.47042	1	99.1349	14.6696
219	0	0	0	576.992	0.23521	1	79.936	12.0207
205	0	0	1	608.559	0	0	86.3601	12.6783
137	0	1	1	246.441	0	0	56.7456	5.1342
250	1	0	0	789.043	5.33333	3	63.457	15.7808
271	1	1	0	558.253	2.66666	3	160.298	11.1650
301	0	1	1	539.815	4.83327	2	64.3414	10.7963
305	0	1	0	87.1340	0	0	12.6547	1.74268
309	1	0	1	659.444	0.16666	1	68.7393	13.1888
306	1	1	1	590.974	4.99993	3	84.2689	11.8195
312	0	1	1	534.213	2.16666	1	78.7701	10.6842
313	0	1	0	202.098	0	0	50.4812	4.04196
315	0	0	0	675.966	1.33333	1	69.159	13.5193
314	0	1	0	582.239	9.83332	2	63.6755	11.6447
317	1	1	1	923.779	4.16660	4	78.6453	18.4756
319	1	1	0	902.897	3.66666	5	73.3427	18.0579
318	1	1	0	623.759	2.16666	1	79.5554	12.475
320	1	1	1	600.069	3.49999	2	62.6335	12.0014
322	0	0	1	922.427	3.99998	2	64.2565	18.4485
323	0	1	0	615.870	3.00007	3	66.3322	12.3174
324	0	1	0	728.912	5.33333	4	71.6001	14.5782

A5.1.4.1.3.4.2. Open Field P49 1 min time-bins 4th interval Descriptive Statistics

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	4. Distance moved (cm) Mean	4. Distance moved (cm) Std.Dev.	4. Distance moved (cm) Std.Err	4. Distance moved (cm) -95.00%	4. Distance moved (cm) +95.00%
Total				62	666.583	217.262	27.5924	611.409	721.758
MS	0			31	597.351	230.644	41.4249	512.750	681.952
MS	1			31	735.815	181.320	32.5661	669.306	802.324
Running	0			28	756.771	142.116	26.8575	701.664	811.878
Running	1			34	592.311	241.131	41.3537	508.176	676.446
Lesion	0			31	658.277	200.788	36.0626	584.628	731.927
Lesion	1			31	674.889	235.629	42.3203	588.460	761.319
MS*Running	0	0		14	697.921	154.721	41.3509	608.588	787.254
MS*Running	0	1		17	514.529	253.289	61.4317	384.299	644.758
MS*Running	1	0		14	815.621	102.712	27.4510	756.317	874.926
MS*Running	1	1		17	670.093	207.149	50.2410	563.587	776.599
MS*Lesion	0	0		16	584.583	217.177	54.2944	468.857	700.308
MS*Lesion	0	1		15	610.971	251.143	64.8448	471.893	750.049
MS*Lesion	1	0		15	736.885	151.752	39.1822	652.848	820.923
MS*Lesion	1	1		16	734.812	210.377	52.5944	622.710	846.915
Running*Lesion	0	0		13	734.881	141.500	39.2452	649.373	820.389
Running*Lesion	0	1		15	775.742	144.772	37.3800	695.570	855.915
Running*Lesion	1	0		18	602.952	221.999	52.3258	492.555	713.350
Running*Lesion	1	1		16	580.339	267.906	66.9765	437.582	723.096
MS*Running*Les	0	0	0	7	654.412	145.314	54.9238	520.018	788.806
MS*Running*Les	0	0	1	7	741.430	162.275	61.3345	591.350	891.510
MS*Running*Les	0	1	0	9	530.271	254.978	84.9928	334.277	726.265
MS*Running*Les	0	1	1	8	496.819	267.698	94.6458	273.018	720.621
MS*Running*Les	1	0	0	6	828.762	55.430	22.6292	770.591	886.932
MS*Running*Les	1	0	1	8	805.766	130.915	46.2857	696.318	915.214
MS*Running*Les	1	1	0	9	675.634	166.818	55.6060	547.406	803.862
MS*Running*Les	1	1	1	8	663.859	257.282	90.9631	448.766	878.953

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Inner zone duration (s) Mean	4. Inner zone duration (s) Std.Dev.	4. Inner zone duration (s) Std.Err	4. Inner zone duration (s) -95.00%	4. Inner zone duration (s) +95.00%
Total				62	3.16801	3.08462	0.39174	2.38466	3.95135
MS	0			31	3.26521	3.49456	0.62764	1.98340	4.54703
MS	1			31	3.07080	2.66747	0.47909	2.09237	4.04924
Running	0			28	2.98045	3.21512	0.60760	1.73376	4.22715
Running	1			34	3.32247	3.01266	0.51666	2.27130	4.37363
Lesion	0			31	3.77177	3.62526	0.65111	2.44201	5.10153
Lesion	1			31	2.56425	2.33474	0.41933	1.70785	3.42064
MS*Running	0	0		14	3.15754	3.37096	0.90092	1.21120	5.10387
MS*Running	0	1		17	3.35389	3.69407	0.89594	1.45457	5.25321
MS*Running	1	0		14	2.80336	3.16832	0.84676	0.97403	4.63270
MS*Running	1	1		17	3.29105	2.25192	0.54617	2.13321	4.44888
MS*Lesion	0	0		16	3.47119	4.19628	1.04907	1.23515	5.70723
MS*Lesion	0	1		15	3.04550	2.68361	0.69290	1.55937	4.53164
MS*Lesion	1	0		15	4.09239	3.01373	0.77814	2.42344	5.76134
MS*Lesion	1	1		16	2.11307	1.93175	0.48293	1.08371	3.14243
Running*Lesion	0	0		13	3.79309	3.90138	1.08204	1.43550	6.15067
Running*Lesion	0	1		15	2.27617	2.39679	0.61885	0.94886	3.60347
Running*Lesion	1	0		18	3.75638	3.52817	0.83159	2.00186	5.51090
Running*Lesion	1	1		16	2.83432	2.31940	0.57985	1.59840	4.07024
MS*Running*Lesi	0	0	0	7	3.26747	4.10090	1.54999	-0.52522	7.06017
MS*Running*Lesi	0	0	1	7	3.04760	2.78838	1.05391	0.46878	5.62643
MS*Running*Lesi	0	1	0	9	3.62964	4.50986	1.50328	0.16305	7.09623
MS*Running*Lesi	0	1	1	8	3.04366	2.78193	0.98356	0.71791	5.36942
MS*Running*Lesi	1	0	0	6	4.40630	3.93839	1.60784	0.27321	8.53940
MS*Running*Lesi	1	0	1	8	1.60116	1.92589	0.68090	-0.00892	3.21125
MS*Running*Lesi	1	1	0	9	3.88311	2.46515	0.82171	1.98822	5.77800
MS*Running*Lesi	1	1	1	8	2.62498	1.92052	0.67900	1.01938	4.23058

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	4. Inner Zone frequency Mean	4. Inner Zone frequency Std.Dev.	4. Inner Zone frequency Std.Err	4. Inner Zone frequency -95.00%	4. Inner Zone frequency +95.00%
Total				62	1.87096	1.60413	0.20372	1.46359	2.27834
MS	0			31	1.80645	1.66171	0.29845	1.19693	2.41597
MS	1			31	1.93548	1.56919	0.28183	1.35989	2.51106
Running	0			28	1.78571	1.61834	0.30583	1.15818	2.41324
Running	1			34	1.94117	1.61322	0.27666	1.37829	2.50405
Lesion	0			31	2.16129	1.80917	0.32493	1.49767	2.82490
Lesion	1			31	1.58064	1.33601	0.23995	1.09059	2.07070
MS*Running	0	0		14	2.14285	1.91581	0.51202	1.03670	3.24901
MS*Running	0	1		17	1.52941	1.41940	0.34425	0.79962	2.25920
MS*Running	1	0		14	1.42857	1.22250	0.32672	0.72272	2.13442
MS*Running	1	1		17	2.35294	1.72992	0.41956	1.46349	3.24238
MS*Lesion	0	0		16	1.87500	1.92786	0.48196	0.84771	2.90228
MS*Lesion	0	1		15	1.73333	1.38701	0.35812	0.96523	2.50143
MS*Lesion	1	0		15	2.46666	1.68466	0.43497	1.53373	3.39960
MS*Lesion	1	1		16	1.43750	1.31497	0.32874	0.73679	2.13820
Running*Lesion	0	0		13	2.07692	1.80099	0.49950	0.98859	3.16525
Running*Lesion	0	1		15	1.53333	1.45733	0.37628	0.72629	2.34037
Running*Lesion	1	0		18	2.22222	1.86470	0.43951	1.29492	3.14951
Running*Lesion	1	1		16	1.62500	1.25830	0.31457	0.95449	2.29550
MS*Running*Lesi	0	0	0	7	2.14285	2.26778	0.85714	0.04550	4.24021
MS*Running*Lesi	0	0	1	7	2.14285	1.67616	0.63353	0.59266	3.69305
MS*Running*Lesi	0	1	0	9	1.66666	1.73205	0.57735	0.33529	2.99803
MS*Running*Lesi	0	1	1	8	1.37500	1.06066	0.37500	0.48826	2.26173
MS*Running*Lesi	1	0	0	6	2.00000	1.26491	0.51639	0.67255	3.32744
MS*Running*Lesi	1	0	1	8	1.00000	1.06904	0.37796	0.10625	1.89374
MS*Running*Lesi	1	1	0	9	2.77777	1.92209	0.64069	1.30032	4.25523
MS*Running*Lesi	1	1	1	8	1.87500	1.45773	0.51538	0.65630	3.09369

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Velocity max (cm/s) Mean	4. Velocity max (cm/s) Std.Dev.	4. Velocity max (cm/s) Std.Err	4. Velocity max (cm/s) -95.00%	4. Velocity max (cm/s) +95.00%
Total				62	82.681	50.1372	6.3674	69.9487	95.413
MS	0			31	72.698	37.1349	6.6696	59.0777	86.320
MS	1			31	92.663	59.3829	10.6655	70.8817	114.445
Running	0			28	86.939	48.5372	9.1726	68.1182	105.759
Running	1			34	79.174	51.8753	8.8965	61.0747	97.275
Lesion	0			31	88.587	57.1476	10.2640	67.6252	109.549
Lesion	1			31	76.775	42.1110	7.5633	61.3288	92.221
MS*Running	0	0		14	74.083	12.1055	3.2353	67.0943	81.073
MS*Running	0	1		17	71.558	49.6337	12.0379	46.0390	97.077
MS*Running	1	0		14	99.794	66.2605	17.7088	61.5365	138.051
MS*Running	1	1		17	86.791	54.4380	13.2031	58.8019	114.780
MS*Lesion	0	0		16	69.062	18.5997	4.6499	59.1517	78.973
MS*Lesion	0	1		15	76.577	50.5284	13.0463	48.5956	104.559
MS*Lesion	1	0		15	109.413	75.6785	19.5401	67.5037	151.322
MS*Lesion	1	1		16	76.960	34.1128	8.5282	58.7834	95.138
Running*Lesion	0	0		13	95.531	62.5923	17.3600	57.7072	133.355
Running*Lesion	0	1		15	79.492	32.5170	8.3958	61.4850	97.499
Running*Lesion	1	0		18	83.571	54.1688	12.7677	56.6344	110.509
Running*Lesion	1	1		16	74.228	50.4530	12.6132	47.3436	101.112
MS*Running*Les	0	0	0	7	79.252	11.2467	4.2508	68.8511	89.654
MS*Running*Les	0	0	1	7	68.915	11.3440	4.2876	58.4236	79.406
MS*Running*Les	0	1	0	9	61.137	19.8059	6.6019	45.9132	76.361
MS*Running*Les	0	1	1	8	83.281	69.8989	24.7130	24.8448	141.718
MS*Running*Les	1	0	0	6	114.523	91.9082	37.5213	18.0716	210.975
MS*Running*Les	1	0	1	8	88.747	42.3631	14.9776	53.3308	124.163
MS*Running*Les	1	1	0	9	106.006	68.6337	22.8779	53.2497	158.762
MS*Running*Les	1	1	1	8	65.174	19.5306	6.9051	48.8465	81.502

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	4. Velocity mean (cm/s) Mean	4. Velocity mean (cm/s) Std.Dev.	4. Velocity mean (cm/s) Std.Err	4. Velocity mean (cm/s) -95.00%	4. Velocity mean (cm/s) +95.00%
Total				62	13.4230	4.34199	0.55143	12.3203	14.5256
MS	0			31	12.0303	4.60157	0.82646	10.3425	13.7182
MS	1			31	14.8156	3.62649	0.65133	13.4854	16.1458
Running	0			28	15.2560	2.79203	0.52764	14.1733	16.3386
Running	1			34	11.9135	4.82418	0.82734	10.2302	13.5967
Lesion	0			31	13.2921	4.05717	0.72869	11.8039	14.7803
Lesion	1			31	13.5539	4.67313	0.83931	11.8398	15.2680
MS*Running	0	0		14	14.0709	3.05266	0.81585	12.3083	15.8334
MS*Running	0	1		17	10.3499	5.04845	1.22442	7.7542	12.9455
MS*Running	1	0		14	16.4410	1.96136	0.52419	15.3086	17.5735
MS*Running	1	1		17	13.4771	4.16147	1.00930	11.3374	15.6167
MS*Lesion	0	0		16	11.7811	4.35185	1.08796	9.4621	14.1000
MS*Lesion	0	1		15	12.2962	4.99357	1.28933	9.5308	15.0615
MS*Lesion	1	0		15	14.9039	3.09657	0.79953	13.1890	16.6187
MS*Lesion	1	1		16	14.7329	4.16392	1.04098	12.5141	16.9517
Running*Lesion	0	0		13	14.8814	2.83618	0.78661	13.1675	16.5953
Running*Lesion	0	1		15	15.5805	2.81001	0.72554	14.0244	17.1367
Running*Lesion	1	0		18	12.1442	4.47699	1.05523	9.9179	14.3706
Running*Lesion	1	1		16	11.6539	5.32431	1.33108	8.8167	14.4910
MS*Running*Les	0	0	0	7	13.2407	2.90890	1.09946	10.5504	15.9310
MS*Running*Les	0	0	1	7	14.9010	3.18133	1.20243	11.9588	17.8433
MS*Running*Les	0	1	0	9	10.6458	5.08422	1.69474	6.7377	14.5539
MS*Running*Les	0	1	1	8	10.0170	5.33613	1.88661	5.5558	14.4781
MS*Running*Les	1	0	0	6	16.7956	0.99297	0.40538	15.7535	17.8376
MS*Running*Les	1	0	1	8	16.1751	2.50030	0.88399	14.0848	18.2654
MS*Running*Les	1	1	0	9	13.6427	3.41918	1.13972	11.0145	16.2709
MS*Running*Les	1	1	1	8	13.2907	5.11349	1.80789	9.0158	17.5657

A5.1.4.1.3.4.3. Open Field P49 1 min intervals 4th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 4. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2775061	1	2775061	704.273	0.00000
MS	28934	1	28934	7.3432	0.00900
Running	41978	1	41978	10.653	0.00190
Lesion	337	1	337	0.0085	0.92670
MS*Running	5177	1	5177	0.1314	0.71840
MS*Lesion	7435	1	7435	0.1887	0.66574
Running*Lesion	1137	1	1137	0.2886	0.59334
MS*Running*Lesion	1652	1	1652	0.4193	0.52001
Error	212777	54	3940		

A5.1.4.1.3.4.4. Open Field P49 1 min intervals 4th interval distance travelled post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 4. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 39403., df = 54.000

Cell No.	MS	{1} 597.35	{2} 735.82
1	0		0.008297
2	1	0.008297	

A5.1.4.1.3.4.5. Open Field P49 1 min intervals 4th interval distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 4. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 39403., df = 54.000

Cell No.	Running	{1} 756.77	{2} 592.31
1	0		0.002161
2	1	0.002161	

A5.1.4.1.3.4.6. Open Field P49 1 min intervals 4th interval Inner zone duration ANOVA

Univariate Tests of Significance for 4. Inner zone duration (s) (P49 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	619.712	1	619.712	61.6977	0.00000
MS	0.213	1	0.213	0.0212	0.88476
Running	0.702	1	0.702	0.0699	0.79239
Lesion	22.587	1	22.587	2.2488	0.13954
MS*Running	0.019	1	0.019	0.0019	0.96518
MS*Lesion	10.109	1	10.109	1.0064	0.32022
Running*Lesion	1.328	1	1.328	0.1322	0.71750
MS*Running*Lesion	3.487	1	3.487	0.3471	0.55817
Error	542.393	54	10.044		

A5.1.4.1.3.4.7. Open Field P49 1 min intervals 4th interval Inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 4. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	213.800	1	213.800	82.4540	0.00000
MS	0.100	1	0.100	0.0389	0.84437
Running	0.159	1	0.159	0.0613	0.80526
Lesion	4.588	1	4.588	1.7694	0.18904
MS*Running	7.995	1	7.995	3.0833	0.08476
MS*Lesion	2.473	1	2.473	0.9537	0.33312
Running*Lesion	0.036	1	0.036	0.0138	0.90661
MS*Running*Lesion	0.144	1	0.144	0.0555	0.81453
Error	140.019	54	2.593		

A5.1.4.1.3.4.8. Open Field P49 1 min intervals 4th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 4. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	423913.	1	423913.	170.801	0.00000
MS	6385.1	1	6385.1	2.572	0.11455
Running	1223.7	1	1223.7	0.493	0.48559
Lesion	2861.2	1	2861.2	1.152	0.28773
MS*Running	765.3	1	765.3	0.308	0.58099
MS*Lesion	5858.3	1	5858.3	2.360	0.13029
Running*Lesion	289.3	1	289.3	0.116	0.73411
MS*Running*Lesion	2153.0	1	2153.0	0.867	0.35579
Error	134023.	54	2481.9		

A5.1.4.1.3.4.9. Open Field P49 1 min intervals 4th interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 4. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	11259.1	1	11259.1	721.344	0.00000
MS	117.38	1	117.38	7.520	0.00825
Running	174.06	1	174.06	11.151	0.00152
Lesion	0.00	1	0.00	0.000	0.98840
MS*Running	1.98	1	1.98	0.126	0.72308
MS*Lesion	3.83	1	3.83	0.245	0.62254
Running*Lesion	3.89	1	3.89	0.249	0.61965
MS*Running*Lesion	6.23	1	6.23	0.399	0.53013
Error	842.86	54	15.61		

A5.1.4.1.3.4.10. Open Field P49 1 min intervals 4th interval Mean velocity post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 4. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 15.609, df = 54.000

Cell No.	MS	{1} 12.030	{2} 14.816
1	0		0.00768
2	1	0.00768	

A5.1.4.1.3.4.11. Open Field P49 1 min intervals 4th interval Mean velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 4. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 15.609, df = 54.000

Cell No.	Running	{1} 15.256	{2} 11.914
1	0		0.00175
2	1	0.00175	

A5.1.4.1.3.5.1. Open Field P49 1 min intervals 5th minute data spreadsheet

	1 MS	2 Running	3 Lesion	4 5. Distance moved (cm)	5 5. Inner zone duration (s)	6 5. Inner Zone frequency	7 5. Velocity max (cm/s)	8 5. Velocity mean (cm/s)
164	1	1	0	583.352	2.33333	1	61.2254	11.6670
129	1	1	1	405.347	0	0	63.2069	8.10696
148	1	0	0	827.356	0	0	82.631	16.5471
141	1	0	1	946.351	1.16676	2	68.7993	18.9270
207	0	1	1	75.8582	0	0	11.8736	1.51716
176	0	0	0	852.170	3.49998	2	76.0146	17.0434
174	0	1	0	373.586	3.66676	3	73.9200	7.47173
227	0	0	1	470.063	0	0	60.4966	9.40128
122	1	1	0	739.419	1.49999	2	61.5199	14.7883
135	1	0	1	633.235	0	0	85.5530	12.6647
197	1	0	0	973.730	0	0	83.5018	19.4746
195	1	1	1	600.514	3.33333	2	74.5816	12.0102
154	1	0	1	817.890	0	0	79.9056	16.3578
203	0	1	1	540.851	4.49999	2	61.8394	10.8170
193	0	0	1	713.333	3.83333	2	66.5358	14.2666
167	0	0	0	829.93	4.83343	3	73.2214	16.5986
222	0	1	0	647.294	6.99991	4	67.9605	12.9458
182	1	1	1	775.147	4.83333	2	73.2058	15.5029
209	1	0	1	671.848	7.16668	5	70.3542	13.4369
144	1	0	0	758.561	5.66676	2	74.5745	15.1712
216	1	1	0	627.639	4.49991	3	67.1966	12.5527
188	0	1	1	417.233	1.33333	1	68.9841	8.34466
169	0	0	0	786.260	6.16658	3	81.206	15.7252
234	0	0	1	847.947	6.16666	2	74.2207	16.9589
117	0	0	1	536.733	6.33333	3	61.8209	10.7346
126	0	0	1	265.336	1.33343	1	56.2311	5.30672
138	1	1	0	719.448	2.83333	3	77.2166	14.3889
157	1	0	1	789.102	2.66666	1	72.8919	15.7820
131	0	1	0	349.266	0	0	63.5396	6.98532
191	0	1	1	694.196	5.49998	3	70.1180	13.8839
160	0	0	0	684.962	3.66666	2	76.7608	13.6992
186	1	0	1	704.267	1.83325	1	77.1039	14.0853

	1 MS	2 Running	3 Lesion	4 5. Distance moved (cm)	5 5. Inner zone duration (s)	6 5. Inner Zone frequency	7 5. Velocity max (cm/s)	8 5. Velocity mean (cm/s)
220	1	1	1	496.726	5.16666	3	68.5618	9.93453
190	1	0	0	750.475	6.35079	2	132.728	15.6349
143	1	0	1	796.299	0	0	71.7575	16.589
196	1	1	0	613.799	3.46101	2	278.811	12.7875
145	1	1	1	553.671	0	0	64.4538	11.5348
198	1	1	0	645.511	1.91541	3	233.068	13.4481
139	1	0	0	656.751	1.51209	1	282.529	13.6823
210	0	1	1	289.294	0	0	65.0222	6.02697
232	0	1	0	627.193	1.14247	2	304.946	13.0665
171	0	0	0	400.214	0	0	82.9875	8.33782
219	0	0	0	690.048	2.5873	2	267.345	14.3760
205	0	0	1	518.99	0	0	93.896	10.8123
137	0	1	1	757.543	0	0	76.9858	15.782
250	1	0	0	574.079	17.0000	5	60.072	11.481
271	1	1	0	503.684	1.99999	2	68.1414	10.0736
301	0	1	1	171.194	0	0	42.5714	3.42388
305	0	1	0	700.552	2.83333	2	74.1608	14.0110
309	1	0	1	256.9	0	0	59.4273	5.13800
306	1	1	1	752.244	10.1666	3	101.389	15.0448
312	0	1	1	281.862	0	0	111.111	5.63724
313	0	1	0	607.50	10.1666	2	57.8461	12.1501
315	0	0	0	722.318	4.33333	3	74.2475	14.4463
314	0	1	0	465.633	0.5	1	62.7570	9.31267
317	1	1	1	458.008	0.5	1	59.6332	9.16016
319	1	1	0	677.555	9.16666	7	58.3289	13.5511
318	1	1	0	383.91	0.66676	1	99.353	7.67822
320	1	1	1	724.80	3.49999	3	79.1663	14.4960
322	0	0	1	714.039	18.8333	6	73.5655	14.280
323	0	1	0	633.557	4.16658	5	77.1905	12.6711
324	0	1	0	568.501	1.83343	1	66.0439	11.3700

A5.1.4.1.3.5.2. Open Field P49 1 min intervals 5th interval Descriptive Stats

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	5. Distance moved (cm) Mean	5. Distance moved (cm) Std.Dev.	5. Distance moved (cm) Std.Err	5. Distance moved (cm) -95.00%	5. Distance moved (cm) +95.00%
Total				62	607.276	188.964	23.9984	559.288	655.264
MS	0			31	555.918	205.124	36.8414	480.678	631.159
MS	1			31	658.633	158.360	28.4423	600.546	716.720
Running	0			28	685.328	178.874	33.8040	615.968	754.688
Running	1			34	542.997	174.356	29.9018	482.161	603.833
Lesion	0			31	644.331	147.186	26.4354	590.343	698.319
Lesion	1			31	570.220	219.325	39.3919	489.771	650.669
MS*Running	0	0		14	645.168	179.651	48.0137	541.440	748.895
MS*Running	0	1		17	482.419	199.900	48.4829	379.640	585.198
MS*Running	1	0		14	725.489	175.227	46.8315	624.315	826.662
MS*Running	1	1		17	603.575	122.237	29.6468	540.727	666.424
MS*Lesion	0	0		16	621.187	155.267	38.8168	538.451	703.923
MS*Lesion	0	1		15	486.298	232.962	60.1506	357.288	615.309
MS*Lesion	1	0		15	669.018	139.023	35.8956	592.030	746.006
MS*Lesion	1	1		16	648.897	178.628	44.6571	553.712	744.081
Running*Lesion	0	0		13	731.297	141.507	39.2470	645.785	816.809
Running*Lesion	0	1		15	645.489	202.188	52.2047	533.521	757.457
Running*Lesion	1	0		18	581.523	118.890	28.0228	522.399	640.646
Running*Lesion	1	1		16	499.656	216.969	54.2423	384.041	615.270
MS*Running*Lesi	0	0	0	7	709.415	151.411	57.2282	569.382	849.447
MS*Running*Lesi	0	0	1	7	580.921	193.316	73.0667	402.133	759.709
MS*Running*Lesi	0	1	0	9	552.565	126.093	42.0311	455.641	649.489
MS*Running*Lesi	0	1	1	8	403.504	244.382	86.4022	199.195	607.813
MS*Running*Lesi	1	0	0	6	756.825	138.185	56.4141	611.808	901.842
MS*Running*Lesi	1	0	1	8	701.987	204.720	72.3797	530.836	873.137
MS*Running*Lesi	1	1	0	9	610.480	110.683	36.8943	525.401	695.558
MS*Running*Lesi	1	1	1	8	595.807	141.498	50.0273	477.512	714.103

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Inner zone duration (s) Mean	5. Inner zone duration (s) Std.Dev.	5. Inner zone duration (s) Std.Err	5. Inner zone duration (s) -95.00%	5. Inner zone duration (s) +95.00%
Total				62	3.28176	3.81231	0.48416	2.3136	4.2499
MS	0			31	3.36225	3.91493	0.70314	1.9262	4.7982
MS	1			31	3.20127	3.76985	0.67708	1.8184	4.5840
Running	0			28	3.74823	4.69598	0.88745	1.9273	5.5691
Running	1			34	2.89761	2.91306	0.49958	1.8812	3.9140
Lesion	0			31	3.71944	3.57598	0.64226	2.4077	5.0311
Lesion	1			31	2.84408	4.04578	0.72664	1.3600	4.3281
MS*Running	0	0		14	4.39910	4.73067	1.26432	1.6676	7.1305
MS*Running	0	1		17	2.50838	2.97304	0.72107	0.9797	4.0369
MS*Running	1	0		14	3.09736	4.74437	1.26798	0.3580	5.8366
MS*Running	1	1		17	3.28684	2.88813	0.70047	1.8019	4.7717
MS*Lesion	0	0		16	3.52478	2.70653	0.67663	2.0825	4.9669
MS*Lesion	0	1		15	3.18889	4.99319	1.28923	0.4237	5.9540
MS*Lesion	1	0		15	3.92707	4.41180	1.13912	1.4839	6.3702
MS*Lesion	1	1		16	2.52083	3.03917	0.75979	0.9013	4.1403
Running*Lesion	0	0		13	4.27824	4.45670	1.23606	1.5850	6.9714
Running*Lesion	0	1		15	3.28889	5.00176	1.29145	0.5190	6.0587
Running*Lesion	1	0		18	3.31586	2.85215	0.67226	1.8975	4.7342
Running*Lesion	1	1		16	2.42708	3.00059	0.75014	0.8281	4.0259
MS*Running*Lesi	0	0	0	7	3.58391	1.94270	0.73427	1.7872	5.3806
MS*Running*Lesi	0	0	1	7	5.21429	6.56992	2.48319	-0.8618	11.2904
MS*Running*Lesi	0	1	0	9	3.47879	3.30135	1.10045	0.9411	6.0164
MS*Running*Lesi	0	1	1	8	1.41666	2.27477	0.80425	-0.4850	3.3184
MS*Running*Lesi	1	0	0	6	5.08829	6.45585	2.63559	-1.6867	11.8632
MS*Running*Lesi	1	0	1	8	1.60417	2.46714	0.87226	-0.4584	3.6667
MS*Running*Lesi	1	1	0	9	3.15293	2.51550	0.83850	1.2193	5.0865
MS*Running*Lesi	1	1	1	8	3.43749	3.43296	1.21373	0.5674	6.3075

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	5. Inner Zone frequency Mean	5. Inner Zone frequency Std.Dev.	5. Inner Zone frequency Std.Err	5. Inner Zone frequency -95.00%	5. Inner Zone frequency +95.00%
Total				62	1.80645	1.61791	0.20547	1.39557	2.21732
MS	0			31	1.77419	1.56438	0.28097	1.20037	2.34801
MS	1			31	1.83871	1.69502	0.30443	1.21696	2.46045
Running	0			28	1.71428	1.67458	0.31646	1.06495	2.36362
Running	1			34	1.88235	1.59097	0.27285	1.32723	2.43747
Lesion	0			31	2.22580	1.56438	0.28097	1.65198	2.79962
Lesion	1			31	1.38709	1.58487	0.28465	0.80576	1.96843
MS*Running	0	0		14	2.07142	1.59153	0.42535	1.15250	2.99035
MS*Running	0	1		17	1.52941	1.54586	0.37492	0.73460	2.32422
MS*Running	1	0		14	1.35714	1.73680	0.46418	0.35434	2.35994
MS*Running	1	1		17	2.23529	1.60192	0.38852	1.41165	3.05893
MS*Lesion	0	0		16	2.18750	1.32759	0.33189	1.48007	2.89492
MS*Lesion	0	1		15	1.33333	1.71824	0.44365	0.38179	2.28486
MS*Lesion	1	0		15	2.26666	1.83095	0.47274	1.25272	3.28061
MS*Lesion	1	1		16	1.43750	1.50416	0.37604	0.63598	2.23901
Running*Lesion	0	0		13	1.92307	1.44115	0.39970	1.05219	2.79395
Running*Lesion	0	1		15	1.53333	1.88477	0.48664	0.48957	2.57708
Running*Lesion	1	0		18	2.44444	1.65288	0.38958	1.62248	3.26640
Running*Lesion	1	1		16	1.25000	1.29099	0.32274	0.56207	1.93792
MS*Running*Lesi	0	0	0	7	2.14285	1.06904	0.40406	1.15415	3.13155
MS*Running*Lesi	0	0	1	7	2.00000	2.08166	0.78679	0.07478	3.92522
MS*Running*Lesi	0	1	0	9	2.22222	1.56347	0.52115	1.02043	3.42401
MS*Running*Lesi	0	1	1	8	0.75000	1.16496	0.41187	-0.22393	1.72393
MS*Running*Lesi	1	0	0	6	1.66666	1.86189	0.76011	-0.28727	3.62060
MS*Running*Lesi	1	0	1	8	1.12500	1.72688	0.61054	-0.31871	2.56871
MS*Running*Lesi	1	1	0	9	2.66666	1.80277	0.60092	1.28093	4.05240
MS*Running*Lesi	1	1	1	8	1.75000	1.28174	0.45316	0.67843	2.82156

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Velocity max (cm/s) Mean	5. Velocity max (cm/s) Std.Dev.	5. Velocity max (cm/s) Std.Err	5. Velocity max (cm/s) -95.00%	5. Velocity max (cm/s) +95.00%
Total				62	88.166	57.8477	7.3466	73.4757	102.857
MS	0			31	83.078	56.7204	10.1872	62.2729	103.883
MS	1			31	93.254	59.4438	10.6764	71.4504	115.058
Running	0			28	90.013	54.1517	10.2337	69.0157	111.011
Running	1			34	86.645	61.4913	10.5456	65.1897	108.100
Lesion	0			31	106.485	76.2884	13.7018	78.5026	134.468
Lesion	1			31	69.847	17.0531	3.0628	63.5921	76.102
MS*Running	0	0		14	87.039	52.8024	14.1120	56.5520	117.526
MS*Running	0	1		17	79.816	61.1710	14.8361	48.3647	111.267
MS*Running	1	0		14	92.987	57.2995	15.3139	59.9041	126.071
MS*Running	1	1		17	93.474	62.9101	15.2579	61.1287	125.819
MS*Lesion	0	0		16	98.759	73.7844	18.4461	59.4423	138.076
MS*Lesion	0	1		15	66.351	21.9138	5.6581	54.2160	78.487
MS*Lesion	1	0		15	114.726	80.6055	20.8122	70.0888	159.364
MS*Lesion	1	1		16	73.124	10.4756	2.6189	67.5424	78.706
Running*Lesion	0	0		13	111.370	74.5344	20.6721	66.3301	156.411
Running*Lesion	0	1		15	71.504	10.1478	2.6201	65.8843	77.123
Running*Lesion	1	0		18	102.957	79.4831	18.7343	63.4311	142.483
Running*Lesion	1	1		16	68.294	21.9131	5.4782	56.6173	79.970
MS*Running*Lesi	0	0	0	7	104.540	71.8776	27.1672	38.0647	171.016
MS*Running*Lesi	0	0	1	7	69.538	12.6415	4.7780	57.8466	81.229
MS*Running*Lesi	0	1	0	9	94.262	79.2526	26.4175	33.3438	155.181
MS*Running*Lesi	0	1	1	8	63.563	28.3622	10.0275	39.8518	87.274
MS*Running*Lesi	1	0	0	6	119.339	83.6165	34.1363	31.5894	207.089
MS*Running*Lesi	1	0	1	8	73.224	7.8569	2.7778	66.6555	79.792
MS*Running*Lesi	1	1	0	9	111.651	83.5090	27.8363	47.4606	175.842
MS*Running*Lesi	1	1	1	8	73.024	13.1682	4.6556	62.0159	84.033

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Velocity mean (cm/s) Mean	5. Velocity mean (cm/s) Std.Dev.	5. Velocity mean (cm/s) Std.Err	5. Velocity mean (cm/s) -95.00%	5. Velocity mean (cm/s) +95.00%
Total				62	12.2436	3.80320	0.48300	11.2778	13.2094
MS	0			31	11.2066	4.12476	0.74083	9.6936	12.7196
MS	1			31	13.2806	3.18979	0.57290	12.1106	14.4506
Running	0			28	13.8200	3.57114	0.67488	12.4353	15.2048
Running	1			34	10.9454	3.52957	0.60531	9.7139	12.1769
Lesion	0			31	13.0044	2.95102	0.53002	11.9220	14.0869
Lesion	1			31	11.4828	4.41656	0.79323	9.8627	13.1028
MS*Running	0	0		14	12.9991	3.55083	0.94900	10.9489	15.0493
MS*Running	0	1		17	9.7304	4.06564	0.98606	7.6400	11.8208
MS*Running	1	0		14	14.6409	3.52523	0.94215	12.6055	16.6763
MS*Running	1	1		17	12.1603	2.45520	0.59547	10.8980	13.4227
MS*Lesion	0	0		16	12.5132	3.09834	0.77458	10.8622	14.1642
MS*Lesion	0	1		15	9.8129	4.70536	1.21491	7.2072	12.4187
MS*Lesion	1	0		15	13.5285	2.79386	0.72137	11.9813	15.0757
MS*Lesion	1	1		16	13.0482	3.59795	0.89948	11.1310	14.9654
Running*Lesion	0	0		13	14.7860	2.74466	0.76123	13.1274	16.4446
Running*Lesion	0	1		15	12.9828	4.06457	1.04946	10.7319	15.2337
Running*Lesion	1	0		18	11.7178	2.42289	0.57108	10.5129	12.9226
Running*Lesion	1	1		16	10.0764	4.38553	1.09638	7.7396	12.4133
MS*Running*Les	0	0	0	7	14.3181	2.90903	1.09951	11.6277	17.0085
MS*Running*Les	0	0	1	7	11.6802	3.84664	1.45389	8.1226	15.2377
MS*Running*Les	0	1	0	9	11.1093	2.56616	0.85538	9.1368	13.0819
MS*Running*Les	0	1	1	8	8.1791	5.00606	1.76991	3.9939	12.3643
MS*Running*Les	1	0	0	6	15.3319	2.69452	1.10003	12.5042	18.1597
MS*Running*Les	1	0	1	8	14.1227	4.14450	1.46530	10.6578	17.5875
MS*Running*Les	1	1	0	9	12.3262	2.24868	0.74956	10.5977	14.0547
MS*Running*Les	1	1	1	8	11.9738	2.81500	0.99525	9.6204	14.3272

A5.1.4.1.3.5.3. Open Field P49 1 min intervals 5th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 5. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2298288	1	2298288	809.021	0.00000
MS	16702	1	16702	5.879	0.01869
Running	32805	1	32805	11.547	0.00128
Lesion	11476	1	11476	4.039	0.04944
MS*Running	636	1	636	0.224	0.63785
MS*Lesion	4123	1	4123	1.451	0.23352
Running*Lesion	36	1	36	0.012	0.91005
MS*Running*Lesion	351	1	351	0.123	0.72642
Error	153404	54	2840		

A5.1.4.1.3.5.4. Open Field P49 1 min intervals 5 interval distance travelled post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 5. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 28408., df = 54.000

Cell No.	MS	{1} 555.92	{2} 658.63
1	0		0.02002(
2	1	0.02002(	

A5.1.4.1.3.5.5. Open Field P49 1 min intervals 5 interval distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 5. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 28408., df = 54.000

Cell No.	Running	{1} 685.33	{2} 543.00
1	0		0.00178{
2	1	0.00178{	

A5.1.4.1.3.5.6. Open Field P49 1 min intervals 5 interval distance travelled post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable 5. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 28408., df = 54.000

Cell No.	Lesion	{1} 644.33	{2} 570.22
1	0		0.08927⁴
2	1	0.08927⁴	

A5.1.4.1.3.5.7. Open Field P49 1 min intervals 5th interval inner zone duration ANOVA

Univariate Tests of Significance for 5. Inner zone duration (s) (P49 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	693.343:	1	693.343:	47.4436!	0.00000(
MS	0.160{	1	0.160{	0.0110(	0.91685!
Running	15.280:	1	15.280:	1.0455!	0.31108!
Lesion	12.563:	1	12.563:	0.8596'	0.35795!
MS*Running	13.762{	1	13.762{	0.9417!	0.33615!
MS*Lesion	7.298{	1	7.298{	0.4994⁴	0.48278'
Running*Lesion	0.005!	1	0.005!	0.0003{	0.98455(
MS*Running*Lesion	53.038(	1	53.038(	3.6292!	0.06210:
Error	789.158(	54	14.614(		

A5.1.4.1.3.5.8. Open Field P49 1 min intervals 5th interval inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 5. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	195.464	1	195.464	76.6967	0.00000
MS	0.008	1	0.008	0.0032	0.95474
Running	0.196	1	0.196	0.0771	0.78222
Lesion	8.999	1	8.999	3.5312	0.06562
MS*Running	7.446	1	7.446	2.9217	0.09313
MS*Lesion	0.023	1	0.023	0.0091	0.92400
Running*Lesion	2.767	1	2.767	1.0859	0.30201
MS*Running*Lesion	0.867	1	0.867	0.3405	0.56197
Error	137.621	54	2.548		

A5.1.4.1.3.5.9. Open Field P49 1 min intervals 5th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 5. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	479120.	1	479120.	143.552	0.00000
MS	1958.2	1	1958.2	0.5867	0.44703
Running	555.2	1	555.2	0.1663	0.68499
Lesion	21563.	1	21563.	6.4608	0.01393
MS*Running	66.7	1	66.7	0.020	0.88813
MS*Lesion	345.4	1	345.4	0.103	0.74892
Running*Lesion	132.5	1	132.5	0.039	0.84283
MS*Running*Lesion	9.7	1	9.7	0.002	0.95726
Error	180230.	54	3337.6		

A5.1.4.1.3.5.10. Open Field P49 1 min intervals 5th interval Maximum velocity post hoc Newman Keuls test (lesion effect)

Cell No.	Newman-Keuls test; variable 5. Velocity max (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 3337.6, df = 54.000		
	Lesion	{1} 106.49	{2} 69.847
1	0		0.01572
2	1	0.01572	

A5.1.4.1.3.5.11. Open Field P49 1 min intervals 5th interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 5. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	9345.66	1	9345.66	813.813	0.00000
MS	68.31	1	68.31	5.948	0.01804
Running	134.11	1	134.11	11.678	0.00120
Lesion	48.43	1	48.43	4.217	0.04486
MS*Running	2.30	1	2.30	0.200	0.65598
MS*Lesion	15.29	1	15.29	1.331	0.25357
Running*Lesion	0.30	1	0.30	0.026	0.87143
MS*Running*Lesion	1.25	1	1.25	0.109	0.74190
Error	620.12	54	11.48		

A5.1.4.1.3.5.12. Open Field P49 1 min intervals 5th interval Mean velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 5. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 11.484, df = 54.000 MS	{1} 11.207	{2} 13.281
1	0		0.01952
2	1	0.01952	

A5.1.4.1.3.5.13. Open Field P49 1 min intervals 5th interval Mean velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 5. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 11.484, df = 54.000 Running	{1} 13.820	{2} 10.945
1	0		0.00171
2	1	0.00171	

A5.1.4.1.3.5.14. Open Field P49 1 min intervals 5th interval Mean velocity post hoc Newman Keuls test (Lesion effect)

Cell No.	Newman-Keuls test; variable 5. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 11.484, df = 54.000 Lesion	{1} 13.004	{2} 11.483
1	0		0.08283
2	1	0.08283	

A5.1.4.1.3.6.1. Open Field P49 1 min time-bins 6th Interval Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 6. Distance moved (cm)	5 6. Inner zone duration (s)	6 6. Inner Zone frequency	7 6. Velocity max (cm/s)	8 6. Velocity mean (cm/s)
164	1	1	0	368.61	0.5	1	65.4314	7.37220
129	1	1	1	669.218	2.49999	3	65.6446	13.3843
148	1	0	0	782.840	7.49999	5	82.3383	15.6568
141	1	0	1	858.680	4.99989	4	79.5181	17.1736
207	0	1	1	225.269	0	0	28.7729	4.50539
176	0	0	0	405.363	2.66666	1	67.7583	8.10726
174	0	1	0	545.810	5.49989	3	76.2699	10.9162
227	0	0	1	353.007	0	0	61.3647	7.06015
122	1	1	0	735.285	3.66666	2	64.4574	14.7057
135	1	0	1	1027.06	2.66666	1	83.1324	20.5413
197	1	0	0	732.801	0	0	76.2677	14.6560
195	1	1	1	587.309	8.50011	4	77.8146	11.746
154	1	0	1	780.742	0.66666	1	75.0925	15.6148
203	0	1	1	291.965	3.66678	3	64.7791	5.83932
193	0	0	1	740.222	9.16666	5	71.1029	14.8044
167	0	0	0	916.199	8.66656	5	95.0757	18.3239
222	0	1	0	643.531	0	0	79.0140	12.8706
182	1	1	1	596.678	20.5001	6	71.2594	11.9335
209	1	0	1	899.26	6.66656	4	88.4246	17.9853
144	1	0	0	832.097	9.33322	5	82.022	16.6419
216	1	1	0	688.226	5.83333	3	77.9535	13.7645
188	0	1	1	267.734	0	0	50.2585	5.35469
169	0	0	0	717.338	12.3333	5	68.5298	14.3467
234	0	0	1	559.104	2.83333	3	73.1868	11.1820
117	0	0	1	631.876	9.16666	4	62.1045	12.6375
126	0	0	1	684.287	5.99989	6	68.8324	13.6857
138	1	1	0	837.481	18.6667	7	130.694	16.7496
157	1	0	1	800.458	0	0	78.9065	16.0091
131	0	1	0	438.667	1.16678	3	59.446	8.77336
191	0	1	1	466.658	7.66666	2	66.9324	9.33317
160	0	0	0	781.607	6.16665	3	77.3370	15.6321
186	1	0	1	720.578	4.66666	4	79.5871	14.4115

	1 MS	2 Running	3 Lesion	4 6. Distance moved (cm)	5 6. Inner zone duration (s)	6 6. Inner Zone frequency	7 6. Velocity max (cm/s)	8 6. Velocity mean (cm/s)
220	1	1	1	124.004	0	0	48.4833	2.48008
190	1	0	0	698.922	2.78897	1	293.262	14.5609
143	1	0	1	721.033	2.95698	4	276.219	15.0215
196	1	1	0	714.352	6.78762	2	121.84	14.8823
145	1	1	1	499.068	0	0	67.692	10.3972
198	1	1	0	690.117	2.88927	3	274.189	14.3774
139	1	0	0	840.22	6.2835	1	291.541	17.5047
210	0	1	1	423.541	2.04972	1	149.595	8.82380
232	0	1	0	576.297	2.15053	2	166.838	12.0062
171	0	0	0	767.763	5.14111	3	273.332	15.9951
219	0	0	0	818.607	10.6524	6	275.721	17.0543
205	0	0	1	998.109	2.01612	1	264.081	20.794
137	0	1	1	491.33	0	0	77.0292	10.2361
250	1	0	0	593.658	10.9998	3	79.2014	11.8731
271	1	1	0	591.703	4.66666	3	65.1327	11.8340
301	0	1	1	49.7802	0	0	6.33927	0.99560
305	0	1	0	517.974	1.99999	1	72.0875	10.3594
309	1	0	1	58.1553	0	0	8.38520	1.16310
306	1	1	1	731.756	12.1666	5	95.9598	14.6351
312	0	1	1	728.511	21.4999	2	101.58	14.5702
313	0	1	0	610.068	9.16666	3	62.5217	12.2013
315	0	0	0	842.883	8.66666	6	74.83	16.8576
314	0	1	0	567.15	9.49999	4	71.6466	11.3430
317	1	1	1	652.948	1.16666	2	68.8380	13.0589
319	1	1	0	383.665	2.49999	1	68.2802	7.67330
318	1	1	0	674.974	0.49989	1	103.574	13.4994
320	1	1	1	612.26	3.50012	3	76.6632	12.2453
322	0	0	1	699.79	4.99998	3	65.4702	13.9959
323	0	1	0	794.776	7.83333	3	84.6541	15.8955
324	0	1	0	605.238	10.6665	5	61.3896	12.1047

A5.1.4.1.3.6.2. Open Field P49 1 min intervals 6th interval Descriptive Stats

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	6. Distance moved (cm) Mean	6. Distance moved (cm) Std.Dev.	6. Distance moved (cm) Std.Err	6. Distance moved (cm) -95.00%	6. Distance moved (cm) +95.00%
Total				62	623.623	211.379	26.845	569.943	677.304
MS	0			31	585.821	214.103	38.454	507.288	664.355
MS	1			31	661.425	205.081	36.833	586.201	736.650
Running	0			28	723.667	197.877	37.395	646.938	800.396
Running	1			34	541.234	187.270	32.116	475.892	606.576
Lesion	0			31	668.201	145.467	26.126	614.843	721.559
Lesion	1			31	579.046	256.094	45.995	485.110	672.982
MS*Running	0	0		14	708.297	178.509	47.708	605.229	811.366
MS*Running	0	1		17	484.959	190.066	46.097	387.236	582.682
MS*Running	1	0		14	739.037	221.242	59.129	611.296	866.779
MS*Running	1	1		17	597.509	171.690	41.641	509.234	685.785
MS*Lesion	0	0		16	659.330	150.668	37.667	579.044	739.615
MS*Lesion	0	1		15	507.413	247.273	63.845	370.477	644.348
MS*Lesion	1	0		15	677.664	144.347	37.270	597.727	757.601
MS*Lesion	1	1		16	646.202	253.295	63.323	511.230	781.173
Running*Lesion	0	0		13	748.485	130.827	36.285	669.427	827.543
Running*Lesion	0	1		15	702.159	244.490	63.127	566.764	837.553
Running*Lesion	1	0		18	610.218	129.507	30.525	545.815	674.621
Running*Lesion	1	1		16	463.628	214.502	53.625	349.327	577.928
MS*Running*Lesi	0	0	0	7	749.966	164.373	62.127	597.945	901.986
MS*Running*Lesi	0	0	1	7	666.629	194.865	73.652	486.408	846.849
MS*Running*Lesi	0	1	0	9	588.835	97.579	32.526	513.829	663.841
MS*Running*Lesi	0	1	1	8	368.099	205.450	72.637	196.339	539.859
MS*Running*Lesi	1	0	0	6	746.758	92.998	37.966	649.161	844.354
MS*Running*Lesi	1	0	1	8	733.247	290.924	102.857	490.029	976.466
MS*Running*Lesi	1	1	0	9	631.601	158.400	52.800	509.844	753.359
MS*Running*Lesi	1	1	1	8	559.156	188.486	66.640	401.577	716.735

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	6. Inner zone duration (s) Mean	6. Inner zone duration (s) Std.Dev.	6. Inner zone duration (s) Std.Err	6. Inner zone duration (s) -95.00%	6. Inner zone duration (s) +95.00%
Total				62	5.24542	4.97428	0.63173	3.9821	6.5086
MS	0			31	5.52719	4.86415	0.87362	3.7430	7.3113
MS	1			31	4.96364	5.14662	0.92436	3.0758	6.8514
Running	0			28	5.28590	3.67836	0.69514	3.8595	6.7122
Running	1			34	5.21208	5.88771	1.00973	3.1577	7.2664
Lesion	0			31	5.97397	4.32501	0.77679	4.3875	7.5604
Lesion	1			31	4.51687	5.52349	0.99204	2.4908	6.5429
MS*Running	0	0		14	6.31972	3.60958	0.96470	4.2356	8.4038
MS*Running	0	1		17	4.87452	5.72487	1.38848	1.9310	7.8179
MS*Running	1	0		14	4.25208	3.57356	0.95507	2.1887	6.3154
MS*Running	1	1		17	5.54964	6.20327	1.50451	2.3602	8.7390
MS*Lesion	0	0		16	6.39232	3.85777	0.96444	4.3366	8.4479
MS*Lesion	0	1		15	4.60439	5.74341	1.48294	1.4237	7.7849
MS*Lesion	1	0		15	5.52772	4.87083	1.25764	2.8303	8.2251
MS*Lesion	1	1		16	4.43482	5.49686	1.37421	1.5057	7.3638
Running*Lesion	0	0		13	7.01531	3.64238	1.01021	4.8142	9.2163
Running*Lesion	0	1		15	3.78707	3.08842	0.79742	2.0767	5.4973
Running*Lesion	1	0		18	5.22188	4.71350	1.11098	2.8779	7.5658
Running*Lesion	1	1		16	5.20105	7.14728	1.78682	1.3925	9.0095
MS*Running*Lesi	0	0	0	7	7.75620	3.32327	1.25607	4.6827	10.8297
MS*Running*Lesi	0	0	1	7	4.88324	3.51720	1.32937	1.6303	8.1361
MS*Running*Lesi	0	1	0	9	5.33153	4.08996	1.36332	2.1877	8.4753
MS*Running*Lesi	0	1	1	8	4.36039	7.43130	2.62736	-1.8523	10.5731
MS*Running*Lesi	1	0	0	6	6.15094	4.11372	1.67942	1.8338	10.4680
MS*Running*Lesi	1	0	1	8	2.82793	2.49403	0.88177	0.7428	4.9130
MS*Running*Lesi	1	1	0	9	5.11224	5.51874	1.83958	0.8701	9.3543
MS*Running*Lesi	1	1	1	8	6.04170	7.25434	2.56479	-0.0230	12.1064

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	6. Inner Zone frequency Mean	6. Inner Zone frequency Std.Dev.	6. Inner Zone frequency Std.Err	6. Inner Zone frequency -95.00%	6. Inner Zone frequency +95.00%
Total				62	2.61290	1.92783	0.24483	2.12332	3.10248
MS	0			31	2.67741	1.95596	0.35130	1.95996	3.39487
MS	1			31	2.54838	1.92939	0.34653	1.84067	3.25609
Running	0			28	3.00000	2.03670	0.38490	2.21025	3.78975
Running	1			34	2.29411	1.80116	0.30889	1.66566	2.92257
Lesion	0			31	2.93548	1.86074	0.33419	2.25295	3.61801
Lesion	1			31	2.29032	1.96966	0.35376	1.56784	3.01280
MS*Running	0	0		14	3.64285	1.98483	0.53046	2.49684	4.78886
MS*Running	0	1		17	1.88235	1.57648	0.38235	1.07180	2.69290
MS*Running	1	0		14	2.35714	1.94569	0.52000	1.23373	3.48055
MS*Running	1	1		17	2.70588	1.96101	0.47561	1.69762	3.71414
MS*Lesion	0	0		16	3.31250	1.77834	0.44458	2.36488	4.26011
MS*Lesion	0	1		15	2.00000	1.96396	0.50709	0.91239	3.08760
MS*Lesion	1	0		15	2.53333	1.92230	0.49633	1.46879	3.59786
MS*Lesion	1	1		16	2.56250	1.99895	0.49974	1.49733	3.62767
Running*Lesion	0	0		13	3.38461	2.10311	0.58329	2.11371	4.65551
Running*Lesion	0	1		15	2.66666	1.98806	0.51331	1.56571	3.76761
Running*Lesion	1	0		18	2.61111	1.64991	0.38888	1.79062	3.43159
Running*Lesion	1	1		16	1.93750	1.94829	0.48707	0.89933	2.97567
MS*Running*Les	0	0	0	7	4.14285	1.86445	0.70469	2.41852	5.86719
MS*Running*Les	0	0	1	7	3.14285	2.11570	0.79966	1.18616	5.09955
MS*Running*Les	0	1	0	9	2.66666	1.50000	0.50000	1.51366	3.81966
MS*Running*Les	0	1	1	8	1.00000	1.19522	0.42257	0.00076	1.99923
MS*Running*Les	1	0	0	6	2.50000	2.16794	0.88506	0.22487	4.77512
MS*Running*Les	1	0	1	8	2.25000	1.90862	0.67480	0.65434	3.84565
MS*Running*Les	1	1	0	9	2.55555	1.87823	0.62607	1.11181	3.99929
MS*Running*Les	1	1	1	8	2.87500	2.16712	0.76619	1.06323	4.68676

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	6. Velocity max (cm/s) Mean	6. Velocity max (cm/s) Std.Dev.	6. Velocity max (cm/s) Std.Err	6. Velocity max (cm/s) -95.00%	6. Velocity max (cm/s) +95.00%
Total				62	98.318	69.316	8.8032	80.7148	115.921
MS	0			31	92.835	65.720	11.8036	68.7291	116.941
MS	1			31	103.800	73.406	13.1842	76.8746	130.726
Running	0			28	116.879	87.591	16.5531	82.9155	150.844
Running	1			34	83.031	45.511	7.8051	67.1520	98.911
Lesion	0			31	114.279	77.940	13.9985	85.6904	142.868
Lesion	1			31	82.356	56.290	10.1100	61.7093	103.004
MS*Running	0	0		14	114.195	85.426	22.8313	64.8714	163.519
MS*Running	0	1		17	75.244	37.959	9.2066	55.7277	94.762
MS*Running	1	0		14	119.564	92.851	24.8155	65.9536	173.175
MS*Running	1	1		17	90.818	51.982	12.6076	64.0914	117.545
MS*Lesion	0	0		16	104.153	71.028	17.7571	66.3053	142.002
MS*Lesion	0	1		15	80.762	59.558	15.3780	47.7798	113.745
MS*Lesion	1	0		15	125.079	85.846	22.1655	77.5392	172.619
MS*Lesion	1	1		16	83.851	54.968	13.7420	54.5609	113.141
Running*Lesion	0	0		13	141.325	98.991	27.4552	81.5054	201.145
Running*Lesion	0	1		15	95.693	73.220	18.9054	55.1457	136.242
Running*Lesion	1	0		18	94.746	53.287	12.5600	68.2466	121.245
Running*Lesion	1	1		16	69.853	31.443	7.8609	53.0979	86.608
MS*Running*Lesi	0	0	0	7	133.227	96.948	36.6431	43.5650	222.890
MS*Running*Lesi	0	0	1	7	95.163	74.616	28.2022	26.1548	164.171
MS*Running*Lesi	0	1	0	9	81.541	33.096	11.0320	56.1011	106.980
MS*Running*Lesi	0	1	1	8	68.161	43.971	15.5462	31.4008	104.922
MS*Running*Lesi	1	0	0	6	150.772	109.729	44.7967	35.6186	265.926
MS*Running*Lesi	1	0	1	8	96.158	77.134	27.2712	31.6719	160.644
MS*Running*Lesi	1	1	0	9	107.951	67.427	22.4757	56.1219	159.780
MS*Running*Lesi	1	1	1	8	71.544	13.365	4.7254	60.3704	82.718

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	6. Velocity mean (cm/s) Mean	6. Velocity mean (cm/s) Std.Dev.	6. Velocity mean (cm/s) Std.Err	6. Velocity mean (cm/s) -95.00%	6. Velocity mean (cm/s) +95.00%
Total				62	12.5832	4.28675	0.54441	11.4946	13.6718
MS	0			31	11.8260	4.36846	0.78460	10.2236	13.4283
MS	1			31	13.3404	4.13479	0.74263	11.8238	14.8571
Running	0			28	14.6175	4.03929	0.76335	13.0512	16.1838
Running	1			34	10.9079	3.77035	0.64661	9.5923	12.2234
Lesion	0			31	13.5013	2.98881	0.53680	12.4050	14.5976
Lesion	1			31	11.6651	5.16624	0.92788	9.7701	13.5601
MS*Running	0	0		14	14.3198	3.73251	0.99755	12.1647	16.4748
MS*Running	0	1		17	9.7723	3.81301	0.92479	7.8118	11.7327
MS*Running	1	0		14	14.9153	4.44569	1.18816	12.3484	17.4821
MS*Running	1	1		17	12.0435	3.46989	0.84157	10.2594	13.8275
MS*Lesion	0	0		16	13.2992	3.08366	0.77091	11.6560	14.9424
MS*Lesion	0	1		15	10.2545	5.05753	1.30584	7.4537	13.0553
MS*Lesion	1	0		15	13.7168	2.97616	0.76844	12.0686	15.3649
MS*Lesion	1	1		16	12.9876	5.06472	1.26618	10.2887	15.6864
Running*Lesion	0	0		13	15.1700	2.69505	0.74747	13.5414	16.7986
Running*Lesion	0	1		15	14.1387	4.97106	1.28352	11.3858	16.8915
Running*Lesion	1	0		18	12.2960	2.63998	0.62225	10.9832	13.6089
Running*Lesion	1	1		16	9.3462	4.29669	1.07417	7.0566	11.6357
MS*Running*Les	0	0	0	7	15.1881	3.36151	1.27053	12.0793	18.2970
MS*Running*Les	0	0	1	7	13.4514	4.13835	1.56415	9.6240	17.2787
MS*Running*Les	0	1	0	9	11.8300	1.95043	0.65014	10.3308	13.3293
MS*Running*Les	0	1	1	8	7.4573	4.16118	1.47120	3.9784	10.9361
MS*Running*Les	1	0	0	6	15.1489	1.96755	0.80325	13.0841	17.2137
MS*Running*Les	1	0	1	8	14.7400	5.81875	2.05724	9.8754	19.6046
MS*Running*Les	1	1	0	9	12.7620	3.24306	1.08102	10.2692	15.2549
MS*Running*Les	1	1	1	8	11.2351	3.75362	1.32710	8.0970	14.3732

A5.1.4.1.3.6.3. Open Field P49 1 min intervals 6th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 6. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2424240	1	2424240	708.878	0.00000
MS	8417	1	8417	2.461	0.12252
Running	53435	1	53435	15.625	0.00022
Lesion	14493	1	14493	4.238	0.04436
MS*Running	2766	1	2766	0.809	0.37239
MS*Lesion	4532	1	4532	1.325	0.25469
Running*Lesion	3672	1	3672	1.073	0.30468
MS*Running*Lesion	586	1	586	0.171	0.68040
Error	184670	54	3419		

A5.1.4.1.3.6.4. Open Field P49 1 min intervals 6th interval distance travelled post hoc Newman Keuls test (MS*Running*Lesion)

Cell No	MS	Running	Lesion	{1} 749.97	{2} 666.63	{3} 588.84	{4} 368.10	{5} 746.76	{6} 733.25	{7} 631.60	{8} 559.16
Newman-Keuls test; variable 6. Distance moved (cm) (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between MS = 34198., df = 54.000											
1	0	0	0		0.81538	0.53724	0.00415	0.97321	0.98306	0.72266	0.41803
2	0	0	1	0.81538		0.69167	0.02147	0.67644	0.48504	0.71313	0.67009
3	0	1	0	0.53724	0.69167		0.06017	0.46256	0.43031	0.65358	0.75539
4	0	1	1	0.00415	0.02147	0.06017		0.00359	0.00409	0.03638	0.04877
5	1	0	0	0.97321	0.67644	0.46256	0.00359		0.88720	0.61982	0.36688
6	1	0	1	0.98306	0.48504	0.43031	0.00409	0.88720		0.53484	0.36323
7	1	1	0	0.72266	0.71313	0.65358	0.03638	0.61982	0.53484		0.72611
8	1	1	1	0.41803	0.67009	0.75539	0.04877	0.36688	0.36323	0.72611	

A5.1.4.1.3.6.5. Open Field P49 1 min intervals 6th interval distance travelled post hoc Newman Keuls test (running effect)

Cell No.	Running	{1} 723.67	{2} 541.23
Newman-Keuls test; variable 6. Distance moved (cm) (P49 1 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 34198., df = 54.000			
1	0		0.000407
2	1	0.000407	

A5.1.4.1.3.6.6. Open Field P49 1 min intervals 6th interval distance travelled post hoc Newman Keuls test (Lesion effect)

Cell No.	Lesion	{1} 668.20	{2} 579.05
Newman-Keuls test; variable 6. Distance moved (cm) (P49 1 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 34198., df = 54.000			
1	0		0.063145
2	1	0.063145	

A5.1.4.1.3.6.7. Open Field P49 1 min intervals 6th interval Inner zone duration ANOVA

Effect	Univariate Tests of Significance for 6. Inner zone duration (s) (P49 1 min timebins sprea Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1717.991	1	1717.991	66.2149(	0.00000(
MS	4.605	1	4.605	0.1774$	0.67521(
Running	0.568	1	0.568	0.02191	0.88287$
Lesion	37.07(	1	37.07(	1.4287/	0.23719;
MS*Running	25.001	1	25.001	0.9635$	0.33066;
MS*Lesion	2.005	1	2.005	0.0772$	0.78210;
Running*Lesion	36.08$	1	36.08$	1.39081	0.24343$
MS*Running*Lesion	5.264	1	5.264	0.2029(	0.65419;
Error	1401.06;	54	25.94$		

A5.1.4.1.3.6.8. Open Field P49 1 min intervals 6th interval Inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 6. Inner Zone frequency (P49 1 min timebins sprea Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	425.4951	1	425.4951	123.656;	0.00000(
MS	0.567$	1	0.567$	0.164$	0.686251
Running	8.2267	1	8.2267	2.390$	0.127891
Lesion	6.426$	1	6.426$	1.8677	0.17739$
MS*Running	17.612$	1	17.612$	5.118$	0.02771;
MS*Lesion	7.1325	1	7.1325	2.072$	0.15571$
Running*Lesion	0.009(	1	0.009(	0.002$	0.95938$
MS*Running*Lesion	1.455$	1	1.455$	0.4231	0.51816$
Error	185.811$	54	3.441(		

A5.1.4.1.3.6.9. Open Field P49 1 min intervals 6th interval Inner zone frequency post hoc Newman Keuls test (MS*running)

Cell No.	Newman-Keuls test; variable 6. Inner Zone frequency (P49 1 min timebins spreac Approximate Probabilities for Post Hoc Tests Error: Between MS = 3.4410, df = 54.000					
	MS	Running	{1} 3.6429	{2} 1.8824	{3} 2.3571	{4} 2.7059
1	0	0		0.052701	0.14280(	0.16746(
2	0	1	0.052701		0.48138(	0.440905
3	1	0	0.14280(	0.48138(		0.604663
4	1	1	0.16746(	0.440905	0.604663	

A5.1.4.1.3.6.10. Open Field P49 1 min intervals 6th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 6. Velocity max (cm/s) (P49 1 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	616663.9	1	616663.9	132.3683	0.000000
MS	2225.6	1	2225.6	0.4777	0.492411
Running	20343.0	1	20343.0	4.3667	0.041374
Lesion	19336.9	1	19336.9	4.1507	0.046530
MS*Running	120.6	1	120.6	0.0259	0.872753
MS*Lesion	1492.3	1	1492.3	0.3203	0.573753
Running*Lesion	1752.8	1	1752.8	0.3763	0.542191
MS*Running*Lesion	40.0	1	40.0	0.0086	0.926540
Error	251569.6	54	4658.7		

A5.1.4.1.3.6.11. Open Field P49 1 min intervals 6th interval Maximum velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 6. Velocity max (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 4658.7, df = 54.000		
	Running	{1} 116.88	{2} 83.032
1	0		0.057319
2	1	0.057319	

A5.1.4.1.3.6.12. Open Field P49 1 min intervals 6th interval Maximum velocity post hoc Newman Keuls test (Lesion effect)

Cell No.	Newman-Keuls test; variable 6. Velocity max (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 4658.7, df = 54.000		
	Lesion	{1} 114.28	{2} 82.357
1	0		0.071176
2	1	0.071176	

A5.1.4.1.3.6.13. Open Field P49 1 min intervals 6th interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 6. Velocity mean (cm/s) (P49 1 min timebins spreac Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	9876.046	1	9876.046	700.4969	0.000000
MS	33.834	1	33.834	2.3998	0.127189
Running	221.399	1	221.399	15.7036	0.000219
Lesion	61.669	1	61.669	4.3741	0.041207
MS*Running	11.409	1	11.409	0.8092	0.372350
MS*Lesion	16.597	1	16.597	1.1772	0.282750
Running*Lesion	13.427	1	13.427	0.9524	0.333467
MS*Running*Lesion	2.195	1	2.195	0.1557	0.694699
Error	761.326	54	14.099		

A5.1.4.1.3.6.14. Open Field P49 1 min intervals 6th interval Mean velocity post hoc Newman Keuls test (MS*Running*Lesion)

Cell No.	Newman-Keuls test; variable 6. Velocity mean (cm/s) (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between MS = 14.099, df = 54.000										
	MS	Running	Lesion	{1} 15.188	{2} 13.451	{3} 11.830	{4} 7.4573	{5} 15.149	{6} 14.740	{7} 12.762	{8} 11.235
1	0	0	0		0.803349	0.508523	0.004309	0.983898	0.970613	0.715636	0.393532
2	0	0	1	0.803349		0.678251	0.023579	0.653613	0.505855	0.721579	0.659178
3	0	1	0	0.508523	0.678251		0.068368	0.427436	0.437052	0.630064	0.758401
4	0	1	1	0.004309	0.023579	0.068368		0.003579	0.005023	0.038579	0.054784
5	1	0	0	0.983898	0.653613	0.427436	0.003579		0.832570	0.603997	0.336875
6	1	0	1	0.970613	0.505855	0.437052	0.005023	0.832570		0.562464	0.371812
7	1	1	0	0.715636	0.721579	0.630064	0.038579	0.603997	0.562464		0.708438
8	1	1	1	0.393532	0.659178	0.758401	0.054784	0.336875	0.371812	0.708438	

A5.1.4.1.3.6.15. Open Field P49 1 min intervals 6th interval Mean velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 6. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 14.099, df = 54.000		
	Running	{1} 14.618	{2} 10.908
1	0		0.000402
2	1	0.000402	

A5.1.4.1.3.6.16. Open Field P49 1 min intervals 6th interval Mean velocity post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable 6. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 14.099, df = 54.000

Cell No.	Lesion	{1} 13.501	{2} 11.665
1	0		0.059582
2	1	0.059582	

A5.1.4.1.3.7.1. Open Field P49 1min intervals 7th interval data spreadsheet

	1 MS	2 Running	3 Lesion	4 7. Distance moved (cm)	5 7. Inner zone duration (s)	6 7. Inner Zone frequency	7 7. Velocity max (cm/s)	8 7. Velocity mean (cm/s)
164	1	1	0	506.305	5.33333	5	58.7719	10.1261
129	1	1	1	325.004	0.66666	1	67.5258	6.50009
148	1	0	0	594.048	1.83333	3	77.1899	11.8809
141	1	0	1	697.639	4.16666	2	72.7725	13.9527
207	0	1	1	255.805	0	0	33.5203	5.11610
176	0	0	0	519.237	6.16666	4	75.0607	10.3847
174	0	1	0	570.874	3.49999	3	71.2592	11.417
227	0	0	1	348.37	0	0	68.5028	6.96748
122	1	1	0	545.319	3.99998	1	61.9844	10.9063
135	1	0	1	1255.92	3.99999	2	106.328	25.1184
197	1	0	0	996.985	6.3333	4	77.7487	19.9397
195	1	1	1	739.594	3.16654	3	74.3853	14.791
154	1	0	1	795.088	0	0	87.5328	15.9017
203	0	1	1	466.358	6.16654	4	71.7712	9.32718
193	0	0	1	879.453	13.5001	5	85.7846	17.5890
167	0	0	0	851.716	1.33333	2	71.6777	17.0343
222	0	1	0	689.006	6.66666	3	78.7996	13.7801
182	1	1	1	927.298	11.3332	6	87.8088	18.5459
209	1	0	1	893.065	8.8333	4	82.9021	17.8613
144	1	0	0	463.095	1.33333	2	67.8308	9.26191
216	1	1	0	594.816	7.16666	2	72.8704	11.8963
188	0	1	1	545.574	1.49999	2	69.6450	10.911
169	0	0	0	690.764	8.49999	6	65.5636	13.8153
234	0	0	1	823.677	17.3333	7	64.9372	16.4735
117	0	0	1	591.858	15.8334	6	55.4288	11.8371
126	0	0	1	818.711	5.83333	3	77.0722	16.3742
138	1	1	0	422.598	3.66654	1	64.0364	8.45196
157	1	0	1	809.891	3.33333	2	85.1731	16.1978
131	0	1	0	802.989	9.66654	3	70.4327	16.0597
191	0	1	1	687.459	6.49999	3	79.6935	13.749
160	0	0	0	763.575	9.49998	5	72.6415	15.2715
186	1	0	1	471.08	0	0	79.6679	9.42160

	1 MS	2 Running	3 Lesion	4 7. Distance moved (cm)	5 7. Inner zone duration (s)	6 7. Inner Zone frequency	7 7. Velocity max (cm/s)	8 7. Velocity mean (cm/s)
220	1	1	1	388.685	0	0	63.3201	7.7737
190	1	0	0	787.181	0	0	92.203	16.3996
143	1	0	1	579.837	1.04166	3	288.644	12.0799
196	1	1	0	575.274	1.10886	1	93.8557	11.9849
145	1	1	1	695.907	0	0	75.4115	14.498
198	1	1	0	844.654	6.2835	4	308.097	17.597
139	1	0	0	909.186	2.38574	2	268.487	18.9414
210	0	1	1	729.564	11.7271	4	260.677	15.1992
232	0	1	0	770.325	2.21773	3	287.780	16.0484
171	0	0	0	506.293	0	0	86.7383	10.5478
219	0	0	0	670.538	10.7184	3	284.179	13.9695
205	0	0	1	659.889	0	0	94.410	13.7477
137	0	1	1	511.095	0	0	76.1417	10.6478
250	1	0	0	505.894	3.99999	4	61.4112	10.1178
271	1	1	0	449.762	4.33333	4	52.3976	8.99524
301	0	1	1	45.7363	0	0	10.2375	0.91472
305	0	1	0	486.523	0.5	1	63.046	9.7304
309	1	0	1	403.215	0	0	65.2740	8.06430
306	1	1	1	426.876	0	0	72.6508	8.53754
312	0	1	1	909.257	9.16666	6	83.307	18.1851
313	0	1	0	489.070	0	0	52.7874	9.78141
315	0	0	0	639.441	5.33333	2	77.9376	12.7888
314	0	1	0	363.453	2	1	62.0082	7.26906
317	1	1	1	710.858	10.666	4	69.9870	14.2171
319	1	1	0	329.995	0	0	72.732	6.59990
318	1	1	0	389.113	1.99999	2	80.5585	7.78226
320	1	1	1	407.792	1.49987	2	71.2597	8.15584
322	0	0	1	884.664	5.49999	3	65.8250	17.693
323	0	1	0	473.707	1.33333	1	70.0629	9.47415
324	0	1	0	501.264	3.66680	2	141.827	10.025

A5.1.4.1.3.7.2. Open Field P49 1 min intervals 7th interval Descriptive Stats

	Descriptive Statistics (P49 1 min timebins spreadsheet)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	7. Distance moved (cm) Mean	7. Distance moved (cm) Std.Dev.	7. Distance moved (cm) Std.Err	7. Distance moved (cm) -95.00%	7. Distance moved (cm) +95.00%
Total				62	619.165	211.940	26.9164	565.342	672.988
MS	0			31	611.169	200.049	35.9298	537.791	684.548
MS	1			31	627.161	226.236	40.6332	544.176	710.145
Running	0			28	707.511	201.833	38.1429	629.248	785.774
Running	1			34	546.409	193.971	33.2658	478.729	614.089
Lesion	0			31	603.323	169.825	30.5014	541.030	665.615
Lesion	1			31	635.007	248.948	44.7125	543.692	726.322
MS*Running	0	0		14	689.156	160.016	42.7662	596.766	781.547
MS*Running	0	1		17	546.945	211.016	51.1790	438.450	655.440
MS*Running	1	0		14	725.866	241.404	64.5181	586.483	865.249
MS*Running	1	1		17	545.873	181.859	44.1074	452.370	639.377
MS*Lesion	0	0		16	611.799	142.310	35.5776	535.967	687.631
MS*Lesion	0	1		15	610.498	253.093	65.3485	470.340	750.657
MS*Lesion	1	0		15	594.282	199.831	51.5962	483.619	704.944
MS*Lesion	1	1		16	657.984	251.000	62.7500	524.236	791.733
Running*Lesion	0	0		13	684.458	169.145	46.9126	582.244	786.672
Running*Lesion	0	1		15	727.491	230.476	59.5088	599.857	855.125
Running*Lesion	1	0		18	544.725	148.424	34.9839	470.915	618.535
Running*Lesion	1	1		16	548.304	240.417	60.1044	420.194	676.414
MS*Running*Lesi	0	0	0	7	663.081	124.054	46.8880	548.350	777.812
MS*Running*Lesi	0	0	1	7	715.232	196.219	74.1641	533.759	896.705
MS*Running*Lesi	0	1	0	9	571.912	149.466	49.8220	457.023	686.802
MS*Running*Lesi	0	1	1	8	518.856	273.027	96.5296	290.600	747.112
MS*Running*Lesi	1	0	0	6	709.398	220.932	90.1953	477.544	941.253
MS*Running*Lesi	1	0	1	8	738.217	270.102	95.4957	512.406	964.029
MS*Running*Lesi	1	1	0	9	517.537	151.030	50.3433	401.445	633.629
MS*Running*Lesi	1	1	1	8	577.752	217.561	76.9195	395.866	759.638

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	7. Inner zone duration (s) Mean	7. Inner zone duration (s) Std.Dev.	7. Inner zone duration (s) Std.Err	7. Inner zone duration (s) -95.00%	7. Inner zone duration (s) +95.00%
Total				62	4.23628	4.29919	0.54599	3.14449	5.3280
MS	0			31	5.29559	5.00857	0.89956	3.45843	7.1327
MS	1			31	3.17697	3.19020	0.57297	2.00679	4.3471
Running	0			28	4.88617	4.96411	0.93813	2.96128	6.8110
Running	1			34	3.70108	3.65379	0.62662	2.42621	4.9759
Lesion	0			31	3.89938	3.10098	0.55695	2.76193	5.0368
Lesion	1			31	4.57318	5.26608	0.94581	2.64157	6.5048
MS*Running	0	0		14	7.11086	5.78731	1.54672	3.76936	10.4523
MS*Running	0	1		17	3.80067	3.81641	0.92561	1.83845	5.7628
MS*Running	1	0		14	2.66148	2.65095	0.70849	1.13086	4.1920
MS*Running	1	1		17	3.60149	3.59843	0.87274	1.75135	5.4516
MS*Lesion	0	0		16	4.44392	3.68951	0.92237	2.47792	6.4099
MS*Lesion	0	1		15	6.20403	6.12023	1.58023	2.81476	9.5933
MS*Lesion	1	0		15	3.31853	2.30668	0.59558	2.04113	4.5959
MS*Lesion	1	1		16	3.04425	3.91789	0.97947	0.95655	5.1319
Running*Lesion	0	0		13	4.41827	3.63779	1.00894	2.21997	6.6165
Running*Lesion	0	1		15	5.29168	5.98349	1.54493	1.97813	8.6052
Running*Lesion	1	0		18	3.52463	2.69698	0.63568	2.18345	4.8658
Running*Lesion	1	1		16	3.89959	4.58776	1.14694	1.45494	6.3442
MS*Running*Lesi	0	0	0	7	5.93596	4.06171	1.53518	2.17950	9.6924
MS*Running*Lesi	0	0	1	7	8.28575	7.26978	2.74772	1.56232	15.0091
MS*Running*Lesi	0	1	0	9	3.28345	3.11244	1.03748	0.89101	5.6758
MS*Running*Lesi	0	1	1	8	4.38254	4.63567	1.63895	0.50702	8.2580
MS*Running*Lesi	1	0	0	6	2.64762	2.23079	0.91071	0.30654	4.9887
MS*Running*Lesi	1	0	1	8	2.67187	3.08159	1.08950	0.09559	5.2481
MS*Running*Lesi	1	1	0	9	3.76581	2.37454	0.79151	1.94057	5.5910
MS*Running*Lesi	1	1	1	8	3.41663	4.80410	1.69850	-0.59969	7.4329

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	7. Inner Zone frequency Mean	7. Inner Zone frequency Std.Dev.	7. Inner Zone frequency Std.Err	7. Inner Zone frequency -95.00%	7. Inner Zone frequency +95.00%
Total				62	2.35483	1.90853	0.24238	1.87016	2.83951
MS	0			31	2.64516	2.07442	0.37257	1.88425	3.40606
MS	1			31	2.06451	1.71144	0.30738	1.43675	2.69227
Running	0			28	2.64285	2.04059	0.38563	1.85159	3.43411
Running	1			34	2.11764	1.78825	0.30668	1.49369	2.74159
Lesion	0			31	2.38709	1.60576	0.28840	1.79809	2.97609
Lesion	1			31	2.32258	2.19677	0.39455	1.51679	3.12836
MS*Running	0	0		14	3.28571	2.33464	0.62395	1.93773	4.63369
MS*Running	0	1		17	2.11764	1.72780	0.41905	1.22929	3.00600
MS*Running	1	0		14	2.00000	1.51910	0.40599	1.12289	2.87710
MS*Running	1	1		17	2.11764	1.90007	0.46083	1.14071	3.09457
MS*Lesion	0	0		16	2.43750	1.67207	0.41801	1.54651	3.32848
MS*Lesion	0	1		15	2.86666	2.47463	0.63894	1.49626	4.23707
MS*Lesion	1	0		15	2.33333	1.58865	0.41018	1.45356	3.21309
MS*Lesion	1	1		16	1.81250	1.83371	0.45842	0.83538	2.78961
Running*Lesion	0	0		13	2.84615	1.77229	0.49154	1.77516	3.91714
Running*Lesion	0	1		15	2.46666	2.29492	0.59254	1.19578	3.73755
Running*Lesion	1	0		18	2.05555	1.43372	0.33793	1.34258	2.76852
Running*Lesion	1	1		16	2.18750	2.16698	0.54174	1.03279	3.34220
MS*Running*Lesi	0	0	0	7	3.14285	2.03540	0.76930	1.26042	5.02528
MS*Running*Lesi	0	0	1	7	3.42857	2.76026	1.04328	0.87575	5.98138
MS*Running*Lesi	0	1	0	9	1.88888	1.16666	0.38888	0.99211	2.78566
MS*Running*Lesi	0	1	1	8	2.37500	2.26384	0.80039	0.48237	4.26762
MS*Running*Lesi	1	0	0	6	2.50000	1.51657	0.61913	0.90845	4.09154
MS*Running*Lesi	1	0	1	8	1.62500	1.50594	0.53243	0.36600	2.88399
MS*Running*Lesi	1	1	0	9	2.22222	1.71593	0.57197	0.90323	3.54120
MS*Running*Lesi	1	1	1	8	2.00000	2.20389	0.77919	0.15750	3.84250

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	7. Velocity max (cm/s) Mean	7. Velocity max (cm/s) Std.Dev.	7. Velocity max (cm/s) Std.Err	7. Velocity max (cm/s) -95.00%	7. Velocity max (cm/s) +95.00%
Total				62	93.380	64.8529	8.2363	76.9108	109.849
MS	0			31	91.250	65.3382	11.7351	67.2841	115.216
MS	1			31	95.510	65.3724	11.7412	71.5315	119.489
Running	0			28	98.533	65.1667	12.3153	73.2641	123.802
Running	1			34	89.136	65.2602	11.1920	66.3665	111.907
Lesion	0			31	101.354	74.5818	13.3953	73.9973	128.711
Lesion	1			31	85.406	53.4617	9.6020	65.7965	105.016
MS*Running	0	0		14	88.982	57.0957	15.2594	56.0168	121.949
MS*Running	0	1		17	93.117	73.1276	17.7360	55.5189	130.716
MS*Running	1	0		14	108.083	73.2374	19.5735	65.7973	150.369
MS*Running	1	1		17	85.156	58.3322	14.1476	55.1644	115.147
MS*Lesion	0	0		16	101.987	74.3751	18.5938	62.3560	141.619
MS*Lesion	0	1		15	79.797	54.3042	14.0212	49.7244	109.869
MS*Lesion	1	0		15	100.678	77.4068	19.9863	57.8119	143.544
MS*Lesion	1	1		16	90.665	53.8794	13.4698	61.9549	119.375
Running*Lesion	0	0		13	106.051	76.0785	21.1003	60.0778	152.025
Running*Lesion	0	1		15	92.017	55.9554	14.4476	61.0300	123.004
Running*Lesion	1	0		18	97.961	75.5078	17.7973	60.4125	135.510
Running*Lesion	1	1		16	79.209	52.0515	13.0128	51.4727	106.945
MS*Running*Lesi	0	0	0	7	104.828	79.3515	29.9920	31.4405	178.216
MS*Running*Lesi	0	0	1	7	73.137	13.4398	5.0797	60.7076	85.567
MS*Running*Lesi	0	1	0	9	99.778	75.0787	25.0262	42.0677	157.489
MS*Running*Lesi	0	1	1	8	85.624	75.2323	26.5986	22.7285	148.520
MS*Running*Lesi	1	0	0	6	107.478	79.5645	32.4820	23.9807	190.976
MS*Running*Lesi	1	0	1	8	108.537	73.7486	26.0740	46.8815	170.192
MS*Running*Lesi	1	1	0	9	96.145	80.4443	26.8147	34.3099	157.980
MS*Running*Lesi	1	1	1	8	72.793	7.1971	2.5445	66.7767	78.810

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	7. Velocity mean (cm/s) Mean	7. Velocity mean (cm/s) Std.Dev.	7. Velocity mean (cm/s) Std.Err	7. Velocity mean (cm/s) -95.00%	7. Velocity mean (cm/s) +95.00%
Total				62	12.4940	4.29239	0.54513	11.4040	13.5841
MS	0			31	12.3268	4.03133	0.72404	10.8481	13.8055
MS	1			31	12.6612	4.59934	0.82606	10.9742	14.3483
Running	0			28	14.2726	4.04618	0.76465	12.7037	15.8416
Running	1			34	11.0293	3.97091	0.68100	9.6438	12.4148
Lesion	0			31	12.2025	3.52443	0.63300	10.9098	13.4953
Lesion	1			31	12.7855	4.98660	0.89562	10.9564	14.6146
MS*Running	0	0		14	13.8924	3.15773	0.84394	12.0692	15.7157
MS*Running	0	1		17	11.0374	4.29639	1.04203	8.8284	13.2464
MS*Running	1	0		14	14.6528	4.87032	1.30164	11.8407	17.4648
MS*Running	1	1		17	11.0212	3.75002	0.90951	9.0931	12.9492
MS*Lesion	0	0		16	12.3374	2.89660	0.72415	10.7939	13.8809
MS*Lesion	0	1		15	12.3155	5.08282	1.31237	9.5008	15.1303
MS*Lesion	1	0		15	12.0587	4.19347	1.08275	9.7365	14.3810
MS*Lesion	1	1		16	13.2261	5.01912	1.25478	10.5516	15.9006
Running*Lesion	0	0		13	13.8733	3.47097	0.96267	11.7758	15.9708
Running*Lesion	0	1		15	14.6187	4.57940	1.18239	12.0827	17.1547
Running*Lesion	1	0		18	10.9959	3.12088	0.73560	9.4439	12.5479
Running*Lesion	1	1		16	11.0669	4.86297	1.21574	8.4756	13.6582
MS*Running*Lesi	0	0	0	7	13.4017	2.40860	0.91036	11.1741	15.6293
MS*Running*Lesi	0	0	1	7	14.3832	3.90399	1.47557	10.7726	17.9938
MS*Running*Lesi	0	1	0	9	11.5095	3.10140	1.03380	9.1256	13.8935
MS*Running*Lesi	0	1	1	8	10.5063	5.53085	1.95545	5.8824	15.1302
MS*Running*Lesi	1	0	0	6	14.4235	4.61280	1.88317	9.5827	19.2644
MS*Running*Lesi	1	0	1	8	14.8247	5.36414	1.89651	10.3402	19.3093
MS*Running*Lesi	1	1	0	9	10.4822	3.23805	1.07935	7.9932	12.9712
MS*Running*Lesi	1	1	1	8	11.6275	4.40077	1.55590	7.9484	15.3066

A5.1.4.1.3.7.3. Open Field P49 1 min intervals 7th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 7. Distance moved (cm) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2393289	1	2393289	563.757	0.00000
MS	5192	1	5192	0.1223	0.72790
Running	39008	1	39008	9.188	0.00373
Lesion	7400	1	7400	0.1743	0.67797
MS*Running	398	1	398	0.0942	0.76010
MS*Lesion	7707	1	7707	0.1815	0.67175
Running*Lesion	5191	1	5191	0.1223	0.72794
MS*Running*Lesion	1777	1	1777	0.418	0.52028
Error	229243	54	4245		

A5.1.4.1.3.7.4. Open Field P49 1 min intervals 7th interval distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 7. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 42452., df = 54.000

Cell No.	Running	{1} 707.51	{2} 546.41
1	0		0.003546
2	1	0.003546	

A5.1.4.1.3.7.5. Open Field P49 1 min intervals 7th interval inner zone duration ANOVA

Univariate Tests of Significance for 7. Inner zone duration (s) (P49 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1126.75	1	1126.75	64.5893	0.00000
MS	83.929	1	83.929	4.8111	0.03260
Running	20.981	1	20.981	1.2027	0.27764
Lesion	9.298	1	9.298	0.5329	0.46851
MS*Running	67.525	1	67.525	3.8707	0.05428
MS*Lesion	13.568	1	13.568	0.7777	0.38172
Running*Lesion	2.513	1	2.513	0.1440	0.70576
MS*Running*Lesion	0.733	1	0.733	0.0420	0.83833
Error	942.028	54	17.445		

A5.1.4.1.3.7.6. Open Field P49 1 min intervals 7th interval inner zone duration post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 7. Inner zone duration (s) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 17.445, df = 54.000

Cell No.	MS	{1} 5.2956	{2} 3.1770
1	0		0.050967
2	1	0.050967	

A5.1.4.1.3.7.7. Open Field P49 1 min intervals 7th interval inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 7. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	350.580	1	350.580	93.5962	0.00000
MS	5.898	1	5.898	1.5746	0.21493
Running	4.654	1	4.654	1.2426	0.26989
Lesion	0.100	1	0.100	0.0269	0.87025
MS*Running	5.509	1	5.509	1.4709	0.23047
MS*Lesion	3.328	1	3.328	0.8885	0.35006
Running*Lesion	0.693	1	0.693	0.1851	0.66869
MS*Running*Lesion	0.195	1	0.195	0.0520	0.82038
Error	202.265	54	3.745		

A5.1.4.1.3.7.8. Open Field P49 1 min intervals 7th interval maximum velocity ANOVA

Effect	Univariate Tests of Significance for 7. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	533522.	1	533522.	117.384	0.00000
MS	443.9	1	443.9	0.097	0.75584
Running	1497.1	1	1497.1	0.329	0.56840
Lesion	4423.4	1	4423.4	0.973	0.32827
MS*Running	2831.3	1	2831.3	0.622	0.43340
MS*Lesion	528.5	1	528.5	0.116	0.73443
Running*Lesion	45.0	1	45.0	0.009	0.92110
MS*Running*Lesion	1676.4	1	1676.4	0.368	0.54618
Error	245435.	54	4545.1		

A5.1.4.1.3.7.9. Open Field P49 1 min intervals 7th interval mean velocity ANOVA

Effect	Univariate Tests of Significance for 7. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	9749.54	1	9749.54	557.356	0.00000
MS	2.310	1	2.310	0.132	0.71770
Running	158.732	1	158.732	9.074	0.00394
Lesion	2.215	1	2.215	0.126	0.72334
MS*Running	1.787	1	1.787	0.102	0.75048
MS*Lesion	2.343	1	2.343	0.133	0.71580
Running*Lesion	1.466	1	1.466	0.083	0.77329
MS*Running*Lesion	7.095	1	7.095	0.405	0.52691
Error	944.593	54	17.492		

A5.1.4.1.3.7.10. Open field P49 1 min intervals 7th Interval mean velocity post hoc Newman Keuls test (running effect)

Newman-Keuls test; variable 7. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 17.492, df = 54.000

Cell No.	Running	{1} 14.273	{2} 11.029
1	0		0.00379(
2	1	0.00379(	

A5.1.4.1.3.8.1. Open Field P49 1 min intervals 8th interval data spreadsheet

	1 MS	2 Running	3 Lesion	4 8. Distance moved (cm)	5 8. Inner zone duration (s)	6 8. Inner Zone frequency	7 8. Velocity max (cm/s)	8 8. Velocity mean (cm/s)
164	1	1	0	462.139	3.33349	2	59.379	9.24279
129	1	1	1	735.093	11	4	61.1485	14.7018
148	1	0	0	702.913	3.83333	2	70.2017	14.0582
141	1	0	1	621.301	10.6666	2	140.856	12.4260
207	0	1	1	457.551	0	0	53.300	9.1510
176	0	0	0	633.924	7.16682	4	69.2464	12.6784
174	0	1	0	795.575	10.5	3	69.0091	15.9115
227	0	0	1	515.288	0	0	58.6651	10.3057
122	1	1	0	155.704	0	0	46.5223	3.11409
135	1	0	1	1004.30	7.99999	3	77.3896	20.0860
197	1	0	0	907.141	7.33333	5	454.082	18.1428
195	1	1	1	363.156	7.99999	1	79.137	7.26312
154	1	0	1	611.09	0	0	75.0236	12.2218
203	0	1	1	480.916	8.16666	4	78.482	9.61832
193	0	0	1	525.680	7.66652	4	56.7979	10.5136
167	0	0	0	848.576	6.33333	5	88.321	16.9715
222	0	1	0	468.826	2.16666	1	66.437	9.37653
182	1	1	1	729.228	1.5	3	94.8354	14.5845
209	1	0	1	822.289	9.66666	5	86.670	16.445
144	1	0	0	661.648	6.66666	3	72.0190	13.2329
216	1	1	0	576.178	4.49999	2	83.2395	11.5235
188	0	1	1	664.155	8.33333	3	68.4138	13.2831
169	0	0	0	718.013	9.16666	6	80.4782	14.3602
234	0	0	1	754.809	3.33349	4	67.3582	15.096
117	0	0	1	318.76	6.8331	2	46.0147	6.37520
126	0	0	1	534.646	8.83332	1	75.0874	10.6929
138	1	1	0	770.083	14.3333	7	73.0470	15.4016
157	1	0	1	552.098	4.83349	1	75.2669	11.0419
131	0	1	0	509.680	3.66666	2	73.9502	10.1936
191	0	1	1	460.640	3.49999	3	87.7701	9.21280
160	0	0	0	462.92	2.99999	3	79.3226	9.25854
186	1	0	1	561.940	6.16666	3	90.5433	11.2388

	1 MS	2 Running	3 Lesion	4 8. Distance moved (cm)	5 8. Inner zone duration (s)	6 8. Inner Zone frequency	7 8. Velocity max (cm/s)	8 8. Velocity mean (cm/s)
220	1	1	1	890.339	12.3333	5	80.2024	17.806
190	1	0	0	598.071	2.04972	2	291.754	12.4598
143	1	0	1	616.683	14.516	2	286.567	12.8475
196	1	1	0	544.182	3.69622	3	239.489	11.3371
145	1	1	1	605.399	0	0	72.7489	12.6125
198	1	1	0	478.683	2.11693	2	243.496	9.97258
139	1	0	0	803.446	10.8198	4	255.369	16.7385
210	0	1	1	525.359	7.76208	2	169.130	10.9450
232	0	1	0	722.604	8.064	5	274.763	15.0542
171	0	0	0	710.065	2.85617	5	176.66	14.7930
219	0	0	0	585.865	4.56988	2	301.065	12.2055
205	0	0	1	449.875	0	0	95.7467	9.3724
137	0	1	1	523.817	0	0	68.3760	10.9128
250	1	0	0	252.398	1.66666	1	58.9077	5.04796
271	1	1	0	556.686	7.66666	3	53.0930	11.1337
301	0	1	1	14.5306	0	0	2.80057	0.29061
305	0	1	0	546.850	3.16682	1	66.3932	10.9370
309	1	0	1	575.428	8.3333	3	70.0990	11.5085
306	1	1	1	383.078	1.33333	1	59.9786	7.66158
312	0	1	1	458.49	1.33333	1	90.6360	9.16992
313	0	1	0	322.153	1	1	56.5292	6.44307
315	0	0	0	363.310	0	0	136.72	7.2662
314	0	1	0	151.415	0	0	38.5900	3.02831
317	1	1	1	270.016	5.3331	2	64.2972	5.40033
319	1	1	0	454.418	0	0	65.074	9.08836
318	1	1	0	733.184	2.66666	3	99.199	14.6636
320	1	1	1	534.751	9.16666	2	57.3438	10.6950
322	0	0	1	761.530	8.16666	4	66.339	15.2306
323	0	1	0	514.775	4.83349	4	73.8872	10.2955
324	0	1	0	528.506	4.83319	3	53.109	10.5701

A5.1.4.1.3.8.2. Open Field P49 1 min intervals 8th interval Descriptive Stats

	Descriptive Statistics (P49 1 min timebins spreadsheet)								
Effect	Level o Factor	Level of Factor	Level of Factor	N	8. Distance moved (cm) Mean	8. Distance moved (cm) Std.Dev.	8. Distance moved (cm) Std.Err	8. Distance moved (cm) -95.00%	8. Distance moved (cm) +95.00%
Total				62	562.293	188.961	23.9981	514.306	610.281
MS	0			31	526.746	179.885	32.3083	460.763	592.728
MS	1			31	597.841	193.992	34.8421	526.684	668.998
Running	0			28	624.072	172.718	32.6407	557.099	691.045
Running	1			34	511.417	188.918	32.3992	445.500	577.333
Lesion	0			31	565.805	189.341	34.0067	496.354	635.256
Lesion	1			31	558.782	191.644	34.4203	488.486	629.078
MS*Running	0	0		14	584.519	159.156	42.5363	492.625	676.413
MS*Running	0	1		17	479.168	186.455	45.2219	383.301	575.034
MS*Running	1	0		14	663.625	182.367	48.7396	558.329	768.920
MS*Running	1	1		17	543.666	191.403	46.4221	445.255	642.076
MS*Lesion	0	0		16	555.192	183.328	45.8321	457.503	652.880
MS*Lesion	0	1		15	496.404	177.253	45.7665	398.244	594.563
MS*Lesion	1	0		15	577.125	201.359	51.9908	465.616	688.634
MS*Lesion	1	1		16	617.262	191.290	47.8226	515.331	719.194
Running*Lesion	0	0		13	634.484	186.967	51.8554	521.501	747.468
Running*Lesion	0	1		15	615.048	165.473	42.7250	523.412	706.684
Running*Lesion	1	0		18	516.202	179.937	42.4116	426.722	605.683
Running*Lesion	1	1		16	506.033	204.365	51.0913	397.134	614.931
MS*Running*Lesi	0	0	0	7	617.526	164.237	62.0757	465.632	769.419
MS*Running*Lesi	0	0	1	7	551.513	159.271	60.1990	404.211	698.814
MS*Running*Lesi	0	1	0	9	506.710	191.684	63.8948	359.368	654.051
MS*Running*Lesi	0	1	1	8	448.183	188.147	66.5201	290.888	605.478
MS*Running*Lesi	1	0	0	6	654.269	225.067	91.8835	418.075	890.463
MS*Running*Lesi	1	0	1	8	670.642	159.532	56.4031	537.269	804.014
MS*Running*Lesi	1	1	0	9	525.695	178.483	59.4945	388.501	662.890
MS*Running*Lesi	1	1	1	8	563.883	215.518	76.1972	383.705	744.060

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	8. Inner zone duration (s) Mean	8. Inner zone duration (s) Std.Dev.	8. Inner zone duration (s) Std.Err	8. Inner zone duration (s) -95.00%	8. Inner zone duration (s) +95.00%
Total				62	5.10943	3.92977	0.49908	4.11146	6.1074
MS	0			31	4.36299	3.39770	0.61024	3.11670	5.6092
MS	1			31	5.85588	4.32495	0.77678	4.26947	7.4422
Running	0			28	5.80280	3.76018	0.71060	4.34475	7.2608
Running	1			34	4.53842	4.02917	0.69099	3.13258	5.9442
Lesion	0			31	4.58087	3.52139	0.63246	3.28921	5.8725
Lesion	1			31	5.63800	4.29225	0.77091	4.06358	7.2124
MS*Running	0	0		14	4.85186	3.34293	0.89343	2.92170	6.7820
MS*Running	0	1		17	3.96039	3.49063	0.84660	2.16568	5.7551
MS*Running	1	0		14	6.75375	4.03022	1.07712	4.42676	9.0807
MS*Running	1	1		17	5.11646	4.53747	1.10050	2.78350	7.4494
MS*Lesion	0	0		16	4.45776	3.12808	0.78202	2.79092	6.1246
MS*Lesion	0	1		15	4.26190	3.77265	0.97409	2.17268	6.3511
MS*Lesion	1	0		15	4.71219	4.00653	1.03448	2.49344	6.9309
MS*Lesion	1	1		16	6.92808	4.46025	1.11506	4.55138	9.3047
Running*Lesion	0	0		13	5.03557	3.17369	0.88022	3.11773	6.9534
Running*Lesion	0	1		15	6.46774	4.19694	1.08364	4.14354	8.7919
Running*Lesion	1	0		18	4.25248	3.80796	0.89754	2.35882	6.1461
Running*Lesion	1	1		16	4.86012	4.36725	1.09181	2.53297	7.1872
MS*Running*Lesi	0	0	0	7	4.72755	3.08478	1.16593	1.87460	7.5805
MS*Running*Lesi	0	0	1	7	4.97617	3.82897	1.44721	1.43495	8.5173
MS*Running*Lesi	0	1	0	9	4.24792	3.33114	1.11038	1.68738	6.8084
MS*Running*Lesi	0	1	1	8	3.63692	3.86557	1.36668	0.40522	6.8686
MS*Running*Lesi	1	0	0	6	5.39493	3.53082	1.44145	1.68955	9.1003
MS*Running*Lesi	1	0	1	8	7.77286	4.30007	1.52030	4.17790	11.3678
MS*Running*Lesi	1	1	0	9	4.25703	4.44040	1.48013	0.84383	7.6702
MS*Running*Lesi	1	1	1	8	6.08331	4.74425	1.67734	2.11701	10.0496

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	8. Inner Zone frequency Mean	8. Inner Zone frequency Std.Dev.	8. Inner Zone frequency Std.Err	8. Inner Zone frequency -95.00%	8. Inner Zone frequency +95.00%
Total				62	2.40322	1.73166	0.21992	1.96346	2.84298
MS	0			31	2.35483	1.83572	0.32970	1.68148	3.02818
MS	1			31	2.45161	1.65002	0.29635	1.84637	3.05684
Running	0			28	2.71428	1.73967	0.32876	2.03971	3.38886
Running	1			34	2.14705	1.70795	0.29291	1.55112	2.74299
Lesion	0			31	2.70967	1.82927	0.32854	2.03869	3.38066
Lesion	1			31	2.09677	1.59905	0.28719	1.51023	2.68331
MS*Running	0	0		14	2.85714	2.03270	0.54326	1.68349	4.03078
MS*Running	0	1		17	1.94117	1.59963	0.38796	1.11872	2.76363
MS*Running	1	0		14	2.57142	1.45254	0.38820	1.73275	3.41010
MS*Running	1	1		17	2.35294	1.83511	0.44508	1.40941	3.29647
MS*Lesion	0	0		16	2.81250	1.90503	0.47625	1.79737	3.82762
MS*Lesion	0	1		15	1.86666	1.68466	0.43497	0.93373	2.79960
MS*Lesion	1	0		15	2.60000	1.80475	0.46598	1.60056	3.59944
MS*Lesion	1	1		16	2.31250	1.53704	0.38426	1.49346	3.13153
Running*Lesion	0	0		13	3.23076	1.78670	0.49554	2.15107	4.31046
Running*Lesion	0	1		15	2.26666	1.62422	0.41937	1.36720	3.16613
Running*Lesion	1	0		18	2.33333	1.81497	0.42779	1.43077	3.23589
Running*Lesion	1	1		16	1.93750	1.61115	0.40279	1.07897	2.79602
MS*Running*Les	0	0	0	7	3.57142	2.07019	0.78246	1.65681	5.48604
MS*Running*Les	0	0	1	7	2.14285	1.86445	0.70469	0.41852	3.86719
MS*Running*Les	0	1	0	9	2.22222	1.64147	0.54715	0.96047	3.48397
MS*Running*Les	0	1	1	8	1.62500	1.59799	0.56497	0.28904	2.96095
MS*Running*Les	1	0	0	6	2.83333	1.47196	0.60092	1.28860	4.37806
MS*Running*Les	1	0	1	8	2.37500	1.50594	0.53243	1.11600	3.63399
MS*Running*Les	1	1	0	9	2.44444	2.06827	0.68942	0.85462	4.03426
MS*Running*Les	1	1	1	8	2.25000	1.66904	0.59009	0.85464	3.64535

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	8. Velocity max (cm/s) Mean	8. Velocity max (cm/s) Std.Dev.	8. Velocity max (cm/s) Std.Err	8. Velocity max (cm/s) -95.00%	8. Velocity max (cm/s) +95.00%
Total				62	103.651	81.577	10.3603	82.9347	124.368
MS	0			31	89.980	62.674	11.2566	66.9916	112.970
MS	1			31	117.322	96.006	17.2431	82.1068	152.537
Running	0			28	125.092	100.049	18.9076	86.2968	163.887
Running	1			34	85.994	58.310	10.0001	65.6490	106.340
Lesion	0			31	124.818	101.989	18.3179	87.4079	162.228
Lesion	1			31	82.484	46.942	8.4311	65.2661	99.703
MS*Running	0	0		14	99.844	67.293	17.9849	60.9904	138.698
MS*Running	0	1		17	81.857	59.418	14.4110	51.3075	112.407
MS*Running	1	0		14	150.339	122.018	32.6108	79.8880	220.790
MS*Running	1	1		17	90.131	58.700	14.2370	59.9501	120.312
MS*Lesion	0	0		16	106.530	78.247	19.5618	64.8352	148.225
MS*Lesion	0	1		15	72.328	34.791	8.9831	53.0612	91.594
MS*Lesion	1	0		15	144.325	122.229	31.5594	76.6368	212.013
MS*Lesion	1	1		16	92.006	55.476	13.8690	62.4457	121.568
Running*Lesion	0	0		13	164.165	124.386	34.4985	88.9995	239.331
Running*Lesion	0	1		15	91.228	58.283	15.0486	58.9523	123.504
Running*Lesion	1	0		18	96.400	73.457	17.3140	59.8710	132.930
Running*Lesion	1	1		16	74.287	32.994	8.2486	56.7061	91.869
MS*Running*Lesi	0	0	0	7	133.116	83.532	31.5724	55.8613	210.371
MS*Running*Lesi	0	0	1	7	66.572	15.837	5.9861	51.9254	81.220
MS*Running*Lesi	0	1	0	9	85.852	71.743	23.9145	30.7052	140.999
MS*Running*Lesi	0	1	1	8	77.363	46.301	16.3698	38.6552	116.072
MS*Running*Lesi	1	0	0	6	200.389	160.733	65.6189	31.7101	369.068
MS*Running*Lesi	1	0	1	8	112.802	73.750	26.0745	51.1456	174.458
MS*Running*Lesi	1	1	0	9	106.949	77.903	25.9679	47.0668	166.831
MS*Running*Lesi	1	1	1	8	71.211	12.937	4.5741	60.3954	82.027

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	8. Velocity mean (cm/s) Mean	8. Velocity mean (cm/s) Std.Dev.	8. Velocity mean (cm/s) Std.Err	8. Velocity mean (cm/s) -95.00%	8. Velocity mean (cm/s) +95.00%
Total				62	11.3421	3.81118	0.48402	10.3743	12.3100
MS	0			31	10.6294	3.64455	0.65458	9.2926	11.9663
MS	1			31	12.0548	3.89896	0.70027	10.6247	13.4850
Running	0			28	12.5934	3.47654	0.65700	11.2454	13.9415
Running	1			34	10.3116	3.81287	0.65390	8.9813	11.6420
Lesion	0			31	11.4355	3.84959	0.69140	10.0235	12.8475
Lesion	1			31	11.2488	3.83366	0.68854	9.8426	12.6550
MS*Running	0	0		14	11.7943	3.20188	0.85573	9.9456	13.6430
MS*Running	0	1		17	9.6702	3.79611	0.92069	7.7184	11.6220
MS*Running	1	0		14	13.3926	3.67079	0.98106	11.2731	15.5121
MS*Running	1	1		17	10.9531	3.83402	0.92988	8.9818	12.9244
MS*Lesion	0	0		16	11.2089	3.74813	0.93703	9.2117	13.2062
MS*Lesion	0	1		15	10.0113	3.55217	0.91716	8.0442	11.9785
MS*Lesion	1	0		15	11.6772	4.07217	1.05143	9.4221	13.9323
MS*Lesion	1	1		16	12.4089	3.82757	0.95689	10.3693	14.4484
Running*Lesion	0	0		13	12.8626	3.80052	1.05407	10.5659	15.1592
Running*Lesion	0	1		15	12.3602	3.28682	0.84865	10.5400	14.1804
Running*Lesion	1	0		18	10.4048	3.64334	0.85874	8.5930	12.2166
Running*Lesion	1	1		16	10.2068	4.11310	1.02827	8.0151	12.3985
MS*Running*Lesi	0	0	0	7	12.5048	3.33494	1.26049	9.4205	15.5891
MS*Running*Lesi	0	0	1	7	11.0838	3.14849	1.19002	8.1719	13.9957
MS*Running*Lesi	0	1	0	9	10.2011	3.92269	1.30756	7.1858	13.2163
MS*Running*Lesi	0	1	1	8	9.0729	3.81870	1.35011	5.8804	12.2654
MS*Running*Lesi	1	0	0	6	13.2800	4.57504	1.86775	8.4788	18.0812
MS*Running*Lesi	1	0	1	8	13.4770	3.17092	1.12109	10.8261	16.1280
MS*Running*Lesi	1	1	0	9	10.6086	3.56738	1.18912	7.8665	13.3507
MS*Running*Lesi	1	1	1	8	11.3407	4.32790	1.53014	7.7225	14.9589

A5.1.4.1.3.8.3. Open Field P49 1 min intervals 8th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 8. Distance moved (cm) (P49 1 min tin Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1962388	1	1962388	567.526	0.00000
MS	8043	1	8043	2.3262	0.13305
Running	19248	1	19248	5.5667	0.02195
Lesion	466	1	466	0.1349	0.71480
MS*Running	42	1	42	0.0124	0.91185
MS*Lesion	3056	1	3056	0.883	0.35134
Running*Lesion	81	1	81	0.023	0.87833
MS*Running*Lesion	19	1	19	0.005	0.94032
Error	18672	54	3457		

A5.1.4.1.3.8.4. Open Field P49 1 min intervals 8th interval distance travelled post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 8. Distance moved (cm) (P49 1 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 34578., df = 54.000		
Cell No.	Running	{1} 624.07	{2} 511.42
1	0		0.021292
2	1	0.021292	

A5.1.4.1.3.8.5. Open Field P49 1 min intervals 8th interval Inner zone duration ANOVA

	Univariate Tests of Significance for 8. Inner zone duration (s) (P49 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1609.12	1	1609.12	102.771	0.00000
MS	33.385	1	33.385	2.132	0.15002
Running	20.568	1	20.568	1.313	0.25679
Lesion	14.062	1	14.062	0.898	0.34750
MS*Running	0.969	1	0.969	0.061	0.80446
MS*Lesion	19.868	1	19.868	1.268	0.26494
Running*Lesion	1.898	1	1.898	0.121	0.72909
MS*Running*Lesion	0.090	1	0.090	0.005	0.93972
Error	845.49	54	15.657		

A5.1.4.1.3.8.6. Open Field P49 1 min intervals 8th interval Inner zone frequency ANOVA

	Univariate Tests of Significance for 8. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	360.954	1	360.954	117.113	0.00000
MS	0.111	1	0.111	0.036	0.85022
Running	5.401	1	5.401	1.752	0.19115
Lesion	6.835	1	6.835	2.217	0.14223
MS*Running	1.744	1	1.744	0.566	0.45510
MS*Lesion	1.796	1	1.796	0.582	0.44855
Running*Lesion	1.142	1	1.142	0.370	0.54511
MS*Running*Lesion	0.306	1	0.306	0.099	0.75359
Error	166.432	54	3.082		

A5.1.4.1.3.8.7. Open Field P49 1 min intervals 8th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 8. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	695267.9	1	695267.9	118.6130	0.000000
MS	15718.8	1	15718.8	2.6817	0.107325
Running	28023.6	1	28023.6	4.7809	0.033133
Lesion	37485.8	1	37485.8	6.3951	0.014396
MS*Running	9254.5	1	9254.5	1.5788	0.214337
MS*Lesion	2221.9	1	2221.9	0.3791	0.540690
Running*Lesion	11508.2	1	11508.2	1.9633	0.166880
MS*Running*Lesion	36.7	1	36.7	0.0063	0.937233
Error	316527.6	54	5861.6		

A5.1.4.1.3.8.8. Open Field P49 1 min intervals 8th Interval Maximum Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 8. Velocity max (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 5861.6, df = 54.000		
	Running	{1} 125.09	{2} 85.995
1	0		0.050516
2	1	0.050516	

A5.1.4.1.3.8.9. Open Field P49 1 min intervals 8th Interval Maximum Velocity post hoc Newman Keuls test (Lesion effect)

Cell No.	Newman-Keuls test; variable 8. Velocity max (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 5861.6, df = 54.000		
	Lesion	{1} 124.82	{2} 82.485
1	0		0.033974
2	1	0.033974	

A5.1.4.1.3.8.10. Open Field P49 1 min intervals 8th interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 8. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	7988.66	1	7988.66	568.100	0.00000
MS	32.536	1	32.536	2.313	0.13406
Running	79.284	1	79.284	5.638	0.02115
Lesion	2.500	1	2.500	0.177	0.67493
MS*Running	0.232	1	0.232	0.016	0.89832
MS*Lesion	11.526	1	11.526	0.819	0.36929
Running*Lesion	0.653	1	0.653	0.046	0.83019
MS*Running*Lesion	0.056	1	0.056	0.004	0.94995
Error	759.351	54	14.062		

A5.1.4.1.3.8.11. Open Field P49 1 min intervals 8th Interval Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 8. Velocity mean (cm/s) (P49 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 14.062, df = 54.000 Running	{1} 12.593	{2} 10.312
1	0		0.02076
2	1	0.02076	

A5.1.4.1.3.9.1. Open Field P49 1 min intervals 9th interval data spreadsheet

	1 MS	2 Running	3 Lesion	4 9. Distance moved (cm)	5 9. Inner zone duration (s)	6 9. Inner Zone frequency	7 9. Velocity max (cm/s)	8 9. Velocity mean (cm/s)
164	1	1	0	849.130	6.99983	7	69.7784	16.9826
129	1	1	1	611.749	4.83333	2	72.1750	12.2349
148	1	0	0	528.924	1.5001	1	57.788	10.578
141	1	0	1	803.049	2.83333	1	81.3488	16.061
207	0	1	1	699.972	0.66666	1	71.8266	13.9994
176	0	0	0	314.062	3.33317	2	57.6619	6.28124
174	0	1	0	374.802	1.33333	1	82.9095	7.49604
227	0	0	1	237.258	0	0	58.0228	4.7451
122	1	1	0	29.8031	0	0	4.29667	0.59606
135	1	0	1	936.058	1.5	1	80.963	18.7211
197	1	0	0	709.653	6.16666	2	75.4237	14.1930
195	1	1	1	383.699	3.83333	1	61.3249	7.67398
154	1	0	1	432.373	0	0	63.4055	8.64747
203	0	1	1	137.972	0	0	47.3319	2.75944
193	0	0	1	650.133	10.1668	3	55.8059	13.0026
167	0	0	0	410.407	2.83333	1	93.724	8.2081
222	0	1	0	688.337	8.99999	5	63.4592	13.7667
182	1	1	1	747.93	8.49999	4	80.448	14.9586
209	1	0	1	580.387	7.66666	3	72.7660	11.6077
144	1	0	0	624.076	11.1668	6	68.0119	12.4815
216	1	1	0	425.414	2.99999	2	71.2386	8.50830
188	0	1	1	130.360	0	0	30.3510	2.60720
169	0	0	0	682.287	3.99998	2	72.7886	13.6457
234	0	0	1	602.247	5.99983	4	55.5456	12.0449
117	0	0	1	427.556	4.49999	4	39.5630	8.5511
126	0	0	1	552.740	0	0	75.1375	11.0548
138	1	1	0	312.93	0	0	56.9841	6.25864
157	1	0	1	692.833	11.9998	5	82.7521	13.8566
131	0	1	0	525.318	0	0	61.0263	10.5063
191	0	1	1	339.933	0.66666	1	52.3292	6.79867
160	0	0	0	543.517	5.33333	2	67.6960	10.8703
186	1	0	1	589.365	4.66666	3	74.0753	11.7873

	1 MS	2 Running	3 Lesion	4 9. Distance moved (cm)	5 9. Inner zone duration (s)	6 9. Inner Zone frequency	7 9. Velocity max (cm/s)	8 9. Velocity mean (cm/s)
220	1	1	1	134.435	0	0	56.5189	2.68870
190	1	0	0	766.703	3.29300	3	284.846	15.9730
143	1	0	1	446.413	2.68816	1	113.897	9.30030
196	1	1	0	447.299	0	0	68.6851	9.31876
145	1	1	1	500.961	0	0	98.1308	10.4367
198	1	1	0	659.37	2.68816	2	310.183	13.736
139	1	0	0	648.517	10.4175	2	280.973	13.5108
210	0	1	1	340.510	0.87365	1	71.0845	7.09397
232	0	1	0	558.148	1.7818	3	291.317	11.6281
171	0	0	0	529.095	0	0	72.236	11.0228
219	0	0	0	575.623	7.76208	1	240.016	11.9921
205	0	0	1	940.676	4.33466	2	266.452	19.5974
137	0	1	1	505.915	0	0	74.5410	10.5399
250	1	0	0	557.249	9.16684	5	66.2130	11.1449
271	1	1	0	533.520	1.33333	2	61.328	10.670
301	0	1	1	12.6974	0	0	1.02673	0.25394
305	0	1	0	460.176	7.49983	3	71.081	9.20353
309	1	0	1	540.183	0	0	68.8201	10.8036
306	1	1	1	519.093	7.49999	3	72.9889	10.3818
312	0	1	1	448.364	7.99999	2	71.2934	8.96729
313	0	1	0	282.235	5.49998	2	127.207	5.64472
315	0	0	0	536.129	0	0	73.4545	10.722
314	0	1	0	54.6661	0	0	7.26117	1.09332
317	1	1	1	264.423	0	0	67.2470	5.2884
319	1	1	0	759.901	12	4	76.8742	15.1980
318	1	1	0	539.908	3.49999	3	140.903	10.7981
320	1	1	1	499.448	4.66666	2	53.1929	9.98898
322	0	0	1	663.012	7.66666	4	70.6491	13.2602
323	0	1	0	376.279	1.83317	2	70.6431	7.52559
324	0	1	0	43.2880	0	0	8.16751	0.86576

A5.1.4.1.3.9.2. Open Field P49 1 min intervals 9th interval Descriptive Stats

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	9. Distance moved (cm) Mean	9. Distance moved (cm) Std.Dev.	9. Distance moved (cm) Std.Err	9. Distance moved (cm) -95.00%	9. Distance moved (cm) +95.00%
Total				62	495.460	214.198	27.2031	441.064	549.856
MS	0			31	440.120	218.370	39.2204	360.021	520.219
MS	1			31	550.800	198.182	35.5946	478.106	623.494
Running	0			28	590.019	159.728	30.1857	528.083	651.955
Running	1			34	417.588	223.833	38.3870	339.489	495.687
Lesion	0			31	495.057	204.112	36.6596	420.188	569.926
Lesion	1			31	495.863	227.220	40.8099	412.518	579.208
MS*Running	0	0		14	547.482	172.058	45.9846	448.138	646.825
MS*Running	0	1		17	351.704	216.714	52.5610	240.280	463.129
MS*Running	1	0		14	632.556	139.596	37.3087	551.955	713.157
MS*Running	1	1		17	483.472	217.128	52.6613	371.834	595.109
MS*Lesion	0	0		16	434.648	190.376	47.5941	333.203	536.093
MS*Lesion	0	1		15	445.956	251.556	64.9514	306.649	585.263
MS*Lesion	1	0		15	559.493	204.509	52.8040	446.240	672.747
MS*Lesion	1	1		16	542.650	198.419	49.6049	436.920	648.381
Running*Lesion	0	0		13	571.249	121.191	33.6125	498.014	644.485
Running*Lesion	0	1		15	606.286	189.746	48.9924	501.207	711.364
Running*Lesion	1	0		18	440.029	235.600	55.5315	322.868	557.191
Running*Lesion	1	1		16	392.341	214.545	53.6364	278.018	506.665
MS*Running*Lesi	0	0	0	7	513.017	118.607	44.8295	403.323	622.711
MS*Running*Lesi	0	0	1	7	581.946	217.493	82.2047	380.798	783.094
MS*Running*Lesi	0	1	0	9	373.694	218.749	72.9166	205.548	541.840
MS*Running*Lesi	0	1	1	8	326.965	226.584	80.1096	137.536	516.395
MS*Running*Lesi	1	0	0	6	639.187	89.903	36.7027	544.840	733.535
MS*Running*Lesi	1	0	1	8	627.583	174.216	61.5947	481.934	773.231
MS*Running*Lesi	1	1	0	9	506.364	245.359	81.7865	317.764	694.964
MS*Running*Lesi	1	1	1	8	457.717	193.715	68.4889	295.767	619.668

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	9. Inner zone duration (s) Mean	9. Inner zone duration (s) Std.Dev.	9. Inner zone duration (s) Std.Err	9. Inner zone duration (s) -95.00%	9. Inner zone duration (s) +95.00%
Total				62	3.62912	3.63931	0.46219	2.7049	4.5533
MS	0			31	3.00274	3.28107	0.58929	1.7992	4.2062
MS	1			31	4.25549	3.91846	0.70377	2.8181	5.6928
Running	0			28	4.60698	3.73751	0.70632	3.1577	6.0562
Running	1			34	2.82381	3.40202	0.58344	1.6368	4.0108
Lesion	0			31	3.91749	3.72165	0.66842	2.5523	5.2826
Lesion	1			31	3.34074	3.59278	0.64528	2.0229	4.6585
MS*Running	0	0		14	3.99499	3.25307	0.86942	2.1167	5.8732
MS*Running	0	1		17	2.18559	3.16481	0.76758	0.5584	3.8127
MS*Running	1	0		14	5.21898	4.19801	1.12196	2.7951	7.6428
MS*Running	1	1		17	3.46203	3.60405	0.87411	1.6090	5.3150
MS*Lesion	0	0		16	3.13812	3.07763	0.76940	1.4981	4.7780
MS*Lesion	0	1		15	2.85833	3.58848	0.92654	0.8711	4.8455
MS*Lesion	1	0		15	4.74882	4.25405	1.09839	2.3930	7.1046
MS*Lesion	1	1		16	3.79299	3.65330	0.91332	1.8462	5.7397
Running*Lesion	0	0		13	4.99792	3.73585	1.03613	2.7403	7.2554
Running*Lesion	0	1		15	4.26817	3.83568	0.99037	2.1440	6.3923
Running*Lesion	1	0		18	3.13719	3.61293	0.85157	1.3405	4.9338
Running*Lesion	1	1		16	2.47126	3.22769	0.80692	0.7513	4.1911
MS*Running*Lesi	0	0	0	7	3.32313	2.78477	1.05254	0.7476	5.8986
MS*Running*Lesi	0	0	1	7	4.66685	3.75772	1.42028	1.1915	8.1421
MS*Running*Lesi	0	1	0	9	2.99423	3.44821	1.14940	0.3437	5.6447
MS*Running*Lesi	0	1	1	8	1.27587	2.74198	0.96943	-1.0164	3.5682
MS*Running*Lesi	1	0	0	6	6.95184	3.95999	1.61666	2.7960	11.1076
MS*Running*Lesi	1	0	1	8	3.91933	4.12598	1.45875	0.4699	7.3687
MS*Running*Lesi	1	1	0	9	3.28014	3.97519	1.32506	0.2245	6.3357
MS*Running*Lesi	1	1	1	8	3.66666	3.39700	1.20102	0.8266	6.5066

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	9. Inner Zone frequency Mean	9. Inner Zone frequency Std.Dev.	9. Inner Zone frequency Std.Err	9. Inner Zone frequency -95.00%	9. Inner Zone frequency +95.00%
Total				62	1.79032	1.71910	0.21832	1.35375	2.22689
MS	0			31	1.48387	1.48033	0.26587	0.94087	2.02686
MS	1			31	2.09677	1.90359	0.34189	1.39853	2.79501
Running	0			28	2.07142	1.71978	0.32500	1.40456	2.73829
Running	1			34	1.55882	1.70899	0.29309	0.96252	2.15512
Lesion	0			31	2.03225	1.85263	0.33274	1.35270	2.71181
Lesion	1			31	1.54838	1.56713	0.28146	0.97355	2.12321
MS*Running	0	0		14	1.78571	1.52812	0.40840	0.90340	2.66802
MS*Running	0	1		17	1.23529	1.43742	0.34862	0.49624	1.97434
MS*Running	1	0		14	2.35714	1.90574	0.50933	1.25679	3.45748
MS*Running	1	1		17	1.88235	1.93269	0.46874	0.88865	2.87605
MS*Lesion	0	0		16	1.50000	1.41421	0.35355	0.74641	2.25358
MS*Lesion	0	1		15	1.46666	1.59761	0.41250	0.58193	2.35139
MS*Lesion	1	0		15	2.60000	2.13139	0.55032	1.41967	3.78032
MS*Lesion	1	1		16	1.62500	1.58640	0.39660	0.77966	2.47033
Running*Lesion	0	0		13	2.07692	1.75411	0.48650	1.01692	3.13692
Running*Lesion	0	1		15	2.06666	1.75119	0.45215	1.09689	3.03644
Running*Lesion	1	0		18	2.00000	1.97036	0.46442	1.02015	2.97984
Running*Lesion	1	1		16	1.06250	1.23659	0.30914	0.40356	1.72143
MS*Running*Lesi	0	0	0	7	1.14285	0.89973	0.34006	0.31074	1.97497
MS*Running*Lesi	0	0	1	7	2.42857	1.81265	0.68511	0.75214	4.10499
MS*Running*Lesi	0	1	0	9	1.77777	1.71593	0.57197	0.45879	3.09676
MS*Running*Lesi	0	1	1	8	0.62500	0.74402	0.26305	0.00298	1.24701
MS*Running*Lesi	1	0	0	6	3.16666	1.94079	0.79232	1.12993	5.20340
MS*Running*Lesi	1	0	1	8	1.75000	1.75254	0.61962	0.28483	3.21516
MS*Running*Lesi	1	1	0	9	2.22222	2.27913	0.75971	0.47032	3.97411
MS*Running*Lesi	1	1	1	8	1.50000	1.51185	0.53452	0.23605	2.76394

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	9. Velocity max (cm/s) Mean	9. Velocity max (cm/s) Std.Dev.	9. Velocity max (cm/s) Std.Err	9. Velocity max (cm/s) -95.00%	9. Velocity max (cm/s) +95.00%
Total				62	87.019	67.912	8.6249	69.7726	104.266
MS	0			31	80.697	66.756	11.9897	56.2108	105.183
MS	1			31	93.341	69.563	12.4939	67.8253	118.857
Running	0			28	98.930	71.902	13.5883	71.0490	126.811
Running	1			34	77.210	63.843	10.9490	54.9344	99.486
Lesion	0			31	101.747	85.030	15.2718	70.5585	132.937
Lesion	1			31	72.290	41.226	7.4045	57.1688	87.413
MS*Running	0	0		14	92.768	69.334	18.5303	52.7359	132.800
MS*Running	0	1		17	70.756	64.941	15.7505	37.3666	104.146
MS*Running	1	0		14	105.091	76.476	20.4393	60.9354	149.248
MS*Running	1	1		17	83.664	64.038	15.5315	50.7392	116.590
MS*Lesion	0	0		16	91.290	74.253	18.5633	51.7240	130.857
MS*Lesion	0	1		15	69.397	58.111	15.0043	37.2162	101.578
MS*Lesion	1	0		15	112.901	96.578	24.9365	59.4184	166.385
MS*Lesion	1	1		16	75.003	15.206	3.8015	66.9006	83.106
Running*Lesion	0	0		13	116.218	87.914	24.3830	63.0921	169.344
Running*Lesion	0	1		15	83.947	53.178	13.7305	54.4980	113.396
Running*Lesion	1	0		18	91.297	83.830	19.7590	49.6090	132.984
Running*Lesion	1	1		16	61.363	22.286	5.5715	49.4878	73.238
MS*Running*Lesi	0	0	0	7	96.797	64.062	24.2134	37.5488	156.045
MS*Running*Lesi	0	0	1	7	88.739	79.207	29.9374	15.4852	161.993
MS*Running*Lesi	0	1	0	9	87.008	84.927	28.3092	21.7269	152.289
MS*Running*Lesi	0	1	1	8	52.473	25.980	9.1853	30.7532	74.192
MS*Running*Lesi	1	0	0	6	138.876	111.715	45.6077	21.6377	256.114
MS*Running*Lesi	1	0	1	8	79.753	15.337	5.4226	66.9310	92.576
MS*Running*Lesi	1	1	0	9	95.585	87.632	29.2108	28.2255	162.946
MS*Running*Lesi	1	1	1	8	70.253	14.445	5.1072	58.1766	82.330

Effect	Descriptive Statistics (P49 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	9. Velocity mean (cm/s) Mean	9. Velocity mean (cm/s) Std.Dev.	9. Velocity mean (cm/s) Std.Err	9. Velocity mean (cm/s) -95.00%	9. Velocity mean (cm/s) +95.00%
Total				62	10.0022	4.34210	0.55144	8.8995	11.1049
MS	0			31	8.8951	4.45538	0.80021	7.2609	10.5294
MS	1			31	11.1092	3.99411	0.71736	9.6442	12.5743
Running	0			28	11.9166	3.27916	0.61970	10.6451	13.1882
Running	1			34	8.4256	4.51469	0.77426	6.8503	10.0008
Lesion	0			31	10.0136	4.15456	0.74618	8.4897	11.5375
Lesion	1			31	9.9907	4.59082	0.82453	8.3068	11.6747
MS*Running	0	0		14	11.0714	3.58757	0.95882	9.0000	13.1428
MS*Running	0	1		17	7.1029	4.38239	1.06288	4.8497	9.3561
MS*Running	1	0		14	12.7619	2.81484	0.75230	11.1367	14.3872
MS*Running	1	1		17	9.7482	4.37217	1.06040	7.5002	11.9962
MS*Lesion	0	0		16	8.7795	3.86996	0.96749	6.7174	10.8417
MS*Lesion	0	1		15	9.0184	5.14381	1.32812	6.1698	11.8669
MS*Lesion	1	0		15	11.3299	4.16450	1.07527	9.0237	13.6362
MS*Lesion	1	1		16	10.9023	3.95279	0.98819	8.7960	13.0086
Running*Lesion	0	0		13	11.5865	2.53790	0.70388	10.0529	13.1201
Running*Lesion	0	1		15	12.2027	3.87659	1.00093	10.0560	14.3495
Running*Lesion	1	0		18	8.8776	4.75969	1.12187	6.5107	11.2446
Running*Lesion	1	1		16	7.9170	4.31798	1.07949	5.6161	10.2179
MS*Running*Les	0	0	0	7	10.3918	2.43416	0.92002	8.1406	12.6431
MS*Running*Les	0	0	1	7	11.7509	4.56989	1.72725	7.5244	15.9773
MS*Running*Les	0	1	0	9	7.5255	4.42647	1.47549	4.1230	10.9280
MS*Running*Les	0	1	1	8	6.6274	4.58446	1.62085	2.7947	10.4602
MS*Running*Les	1	0	0	6	12.9803	2.00471	0.81842	10.8765	15.0841
MS*Running*Les	1	0	1	8	12.5981	3.43113	1.21309	9.7296	15.4666
MS*Running*Les	1	1	0	9	10.2297	4.94309	1.64769	6.4301	14.0293
MS*Running*Les	1	1	1	8	9.2065	3.89041	1.37546	5.9540	12.4590

A5.1.4.1.3.9.3. Open Field P49 1 min intervals 9th interval distance travelled ANOVA

Effect	Univariate Tests of Significance for 9. Distance moved (cm) (P49 1 min tin Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1544633	1	1544633	395.761	0.00000
MS	18047	1	18047	4.624	0.03602
Running	46283	1	46283	11.858	0.00111
Lesion	137	1	137	0.035	0.85158
MS*Running	799	1	799	0.204	0.65261
MS*Lesion	647	1	647	0.165	0.68534
Running*Lesion	2221	1	2221	0.569	0.45385
MS*Running*Lesion	588	1	588	0.150	0.69923
Error	210758	54	3902		

A5.1.4.1.3.9.4. Open Field P49 1 min intervals 9th interval distance travelled post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 9. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 39029., df = 54.000

Cell No.	MS	{1} 440.12	{2} 550.80
1	0		0.031781
2	1	0.031781	

A5.1.4.1.3.9.5. Open Field P49 1 min intervals 9th interval distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 9. Distance moved (cm) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 39029., df = 54.000

Cell No.	Running	{1} 590.02	{2} 417.59
1	0		0.001319
2	1	0.001319	

A5.1.4.1.3.9.6. Open Field P49 1 min intervals 9th interval Inner zone duration ANOVA

Univariate Tests of Significance for 9. Inner zone duration (s) (P49 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	861.936	1	861.936	68.0703	0.00000
MS	29.430	1	29.430	2.3242	0.13321
Running	55.672	1	55.672	4.3966	0.04070
Lesion	8.693	1	8.693	0.6865	0.41099
MS*Running	0.039	1	0.039	0.0031	0.95547
MS*Lesion	4.915	1	4.915	0.3881	0.53588
Running*Lesion	0.121	1	0.121	0.0095	0.92236
MS*Running*Lesion	40.019	1	40.019	3.1605	0.08107
Error	683.772	54	12.662		

A5.1.4.1.3.9.7. Open Field P49 1 min intervals 9th interval Inner zone duration post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 9. Inner zone duration (s) (P49 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 12.662, df = 54.000

Cell No.	Running	{1} 4.6070	{2} 2.8238
1	0		0.054846
2	1	0.054846	

A5.1.4.1.3.9.8. Open Field P49 1 min intervals 9th interval Inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 9. Inner Zone frequency (P49 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	203.450	1	203.450	73.2955	0.00000
MS	6.765(	1	6.765(	2.4371(	0.12433
Running	5.320:	1	5.320:	1.9167:	0.17191
Lesion	3.833:	1	3.833:	1.3811:	0.24506
MS*Running	0.000(	1	0.000(	0.0002:	0.98799
MS*Lesion	4.917:	1	4.917:	1.7715:	0.18878
Running*Lesion	2.898(	1	2.898(	1.0440:	0.31144
MS*Running*Lesion	9.351-	1	9.351-	3.3689:	0.07194
Error	149.890	54	2.775(		

A5.1.4.1.3.9.9. Open Field P49 1 min intervals 9th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 9. Velocity max (cm/s) (P49 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	479582.:	1	479582.:	102.915	0.00000
MS	3367.-	1	3367.-	0.722(	0.39903
Running	9308.(	1	9308.(	1.997(	0.16328:
Lesion	15378.:	1	15378.:	3.3001	0.07482
MS*Running	43.2	1	43.2	0.009:	0.92363
MS*Lesion	1669.(	1	1669.(	0.358:	0.55195
Running*Lesion	50.9	1	50.9	0.010:	0.91711
MS*Running*Lesion	3460.(	1	3460.(	0.742(	0.39263
Error	251638.:	54	4660.(		

A5.1.4.1.3.9.10. Open Field P49 1 min intervals 9th interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 9. Velocity mean (cm/s) (P49 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	6298.97:	1	6298.97:	391.579	0.00000
MS	72.42:	1	72.42:	4.502	0.03845
Running	190.27:	1	190.27:	11.828-	0.00113
Lesion	0.85(	1	0.85(	0.052(	0.81908
MS*Running	3.252	1	3.252	0.202:	0.65477-
MS*Lesion	3.319	1	3.319	0.206:	0.65150:
Running*Lesion	8.003	1	8.003	0.497	0.48363
MS*Running*Lesion	2.48(	1	2.48(	0.154:	0.69564
Error	868.64	54	16.08(		

A5.1.4.1.3.9.11. Open Field P49 1 min 9th interval Mean velocity post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable 9. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 16.086, df = 54.000

Cell No.	MS	{1} 8.8952	{2} 11.109
1	0		0.034248
2	1	0.034248	

A5.1.4.1.3.9.12. Open Field P49 1 min 9th interval mean velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 9. Velocity mean (cm/s) (P49 1 min timebins spreads
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 16.086, df = 54.000

Cell No.	Running	{1} 11.917	{2} 8.4256
1	0		0.001353
2	1	0.001353	

A5.1.4.1.3.10.1. Open Field P49 1 min time-bins repeated measures ANOVA Distance travelled

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 1 min timebins spreads					
Sigma-restricted parameterization					
Effective hypothesis decomposition					
Intercept	24251685	1	24251685	2211.59	0.00000
MS	71921	1	71921	6.559	0.01326
Running	263376	1	263376	24.01	0.00000
Lesion	11390	1	11390	1.039	0.31266
MS*Running	1544	1	1544	0.141	0.70893
MS*Lesion	1319	1	1319	0.12	0.73002
Running*Lesion	1673	1	1673	0.153	0.69763
MS*Running*Lesion	1327	1	1327	0.121	0.72925
Error	592146	54	10965		
TIME	563869	8	70483	24.06	0.00000
TIME*MS	20541	8	2567	0.877	0.53608
TIME*Running	18165	8	2270	0.775	0.62475
TIME*Lesion	22399	8	2800	0.956	0.47007
TIME*MS*Running	5511	8	688	0.235	0.98418
TIME*MS*Lesion	14352	8	1794	0.613	0.76752
TIME*Running*Lesion	15840	8	1980	0.676	0.71277
TIME*MS*Running*Lesion	8002	8	1000	0.342	0.94945
Error	1265281	432	2928		

A5.1.4.1.3.10.2. Open Field P49 1min time-bins Repeated measures Distance travelled post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 776.08	{2} 838.09	{3} 737.23	{4} 666.58
Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe					
Approximate Probabilities for Post Hoc Tests					
Error: Within MS = 29289., df = 432.00					
1	1. Distance moved (cn		0.04364	0.20631	0.00108
2	2. Distance moved (cn	0.04364		0.00297	0.00000
3	3. Distance moved (cn	0.20631	0.00297		0.02154
4	4. Distance moved (cn	0.00108	0.00000	0.02154	
5	5. Distance moved (cn	0.00002	0.00002	0.00024	0.21562
6	6. Distance moved (cn	0.00001	0.00001	0.00065	0.16223
7	7. Distance moved (cn	0.00002	0.00002	0.00072	0.27099
8	8. Distance moved (cn	0.00002	0.00003	0.00002	0.00623
9	9. Distance moved (cn	0.00003	0.00001	0.00002	0.00002

Cell No.	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe Approximate Probabilities for Post Hoc Tests Error: Within MS = 29289., df = 432.00 TIME	{6} 623.62	{7} 619.17	{8} 562.29	{9} 495.46
1	1. Distance moved (cn	0.00001	0.00002	0.00002	0.00003
2	2. Distance moved (cn	0.00001	0.00002	0.00003	0.00001
3	3. Distance moved (cn	0.00065	0.00072	0.00002	0.00002
4	4. Distance moved (cn	0.16223	0.27099	0.00623	0.00002
5	5. Distance moved (cn	0.85568	0.69890	0.14335	0.00081
6	6. Distance moved (cn		0.88468	0.18969	0.00030
7	7. Distance moved (cn	0.88468		0.15346	0.00033
8	8. Distance moved (cn	0.18969	0.15346		0.02968
9	9. Distance moved (cn	0.00030	0.00033	0.02968	

A5.1.4.1.3.10.3. Open Field P49 1 min time-bins repeated measures ANOVA Inner Zone duration

Effect	Repeated Measures Analysis of Variance (P49 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	7471.596	1	7471.596	202.7403	0.000000
MS	8.748	1	8.748	0.2374	0.628089
Running	54.303	1	54.303	1.4735	0.230077
Lesion	21.389	1	21.389	0.5804	0.449473
MS*Running	93.762	1	93.762	2.5442	0.116535
MS*Lesion	9.738	1	9.738	0.2642	0.609314
Running*Lesion	0.109	1	0.109	0.0030	0.956818
MS*Running*Lesion	28.011	1	28.011	0.7601	0.387166
Error	1990.064	54	36.853		
TIME	610.621	8	76.328	7.0720	0.000000
TIME*MS	187.480	8	23.435	2.1713	0.028602
TIME*Running	60.680	8	7.585	0.7028	0.689193
TIME*Lesion	109.974	8	13.747	1.2737	0.255276
TIME*MS*Running	84.246	8	10.531	0.9757	0.454293
TIME*MS*Lesion	60.210	8	7.526	0.6973	0.694008
TIME*Running*Lesion	56.604	8	7.076	0.6556	0.730649
TIME*MS*Running*Lesion	84.963	8	10.620	0.9840	0.447736
Error	4662.517	432	10.793		

A5.1.4.1.3.10.4. Open Field P49 1min time-bins Repeated measures Inner Zone duration post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 10.793, df = 432.00

Cell No.	TIME	{1} 1.6301	{2} 3.0818	{3} 3.4403	{4} 3.1680	{5} 3.2818
1	1. Inner zone duration (		0.01388	0.01835	0.02481	0.02634
2	2. Inner zone duration (	0.01388		0.92972	0.88383	0.93865
3	3. Inner zone duration (	0.01835	0.92972		0.88928	0.78822
4	4. Inner zone duration (	0.02481	0.88383	0.88928		0.84714
5	5. Inner zone duration (	0.02634	0.93865	0.78822	0.84714	
6	6. Inner zone duration (	0.00001	0.00600	0.01886	0.00786	0.01130
7	7. Inner zone duration (	0.00022	0.36762	0.36803	0.36738	0.36854
8	8. Inner zone duration (	0.00003	0.01057	0.02416	0.01283	0.01672
9	9. Inner zone duration (	0.00920	0.88631	0.74894	0.86290	0.82619

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 10.793, df = 432.00

Cell No.	TIME	{6} 5.2454	{7} 4.2363	{8} 5.1094	{9} 3.6291
1	1. Inner zone duration (	0.00001	0.00022	0.00003	0.00920
2	2. Inner zone duration (	0.00600	0.36762	0.01057	0.88631
3	3. Inner zone duration (	0.01886	0.36803	0.02416	0.74894
4	4. Inner zone duration (	0.00786	0.36738	0.01283	0.86290
5	5. Inner zone duration (	0.01130	0.36854	0.01672	0.82619
6	6. Inner zone duration (		0.20129	0.81775	0.03131
7	7. Inner zone duration (	0.20129		0.13893	0.30347
8	8. Inner zone duration (	0.81775	0.13893		0.03247
9	9. Inner zone duration (	0.03131	0.30347	0.03247	

A5.1.4.1.3.10.5. Open Field P49 1min time-bins Repeated measures Inner Zone duration post hoc Newman Keuls test (Time*MS)

Cell No.	MS	TIME	{1} 1.8704	{2} 3.8594	{3} 3.2451	{4} 3.2652	{5} 3.3623	{6} 5.5272
	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 13.688, df = 357.89							
1	0	1. Inner zone duration		0.37712	0.65128	0.70588	0.69048	0.00128
2	0	2. Inner zone duration	0.37712		0.94807	0.89234	0.82236	0.34298
3	0	3. Inner zone duration	0.65128	0.94807		0.98082	0.98920	0.15974
4	0	4. Inner zone duration	0.70588	0.89234	0.98082		0.90743	0.14384
5	0	5. Inner zone duration	0.69048	0.82236	0.98920	0.90743		0.15776
6	0	6. Inner zone duration	0.00128	0.34298	0.15974	0.14384	0.15776	
7	0	7. Inner zone duration	0.00370	0.42086	0.25316	0.22519	0.23570	0.78136
8	0	8. Inner zone duration	0.12727	0.81822	0.83329	0.77655	0.75185	0.50234
9	0	9. Inner zone duration	0.36376	0.98342	0.99844	0.99959	0.99951	0.12915
10	1	1. Inner zone duration	0.60892	0.26367	0.49929	0.54626	0.52808	0.00132
11	1	2. Inner zone duration	0.64443	0.82063	0.91767	0.94897	0.95132	0.04422
12	1	3. Inner zone duration	0.68407	0.81160	0.97587	0.91802	0.77131	0.40619
13	1	4. Inner zone duration	0.57742	0.99086	0.99773	0.99959	0.99961	0.30159
14	1	5. Inner zone duration	0.71724	0.98195	0.96277	0.99745	0.99821	0.31921
15	1	6. Inner zone duration	0.06058	0.64268	0.60034	0.54301	0.52901	0.82027
16	1	7. Inner zone duration	0.63393	0.99102	0.99710	0.99970	0.99966	0.33911
17	1	8. Inner zone duration	0.00265	0.33805	0.16636	0.15150	0.16482	0.72653
18	1	9. Inner zone duration	0.31604	0.67342	0.89141	0.83007	0.77747	0.65770

Cell No.	MS	TIME	{7} 5.2956	{8} 4.3630	{9} 3.0027	{10} 1.3897	{11} 2.3042	{12} 3.6354
	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 13.688, df = 357.89							
1	0	1. Inner zone duration	0.00370	0.12727	0.36376	0.60892	0.64443	0.68407
2	0	2. Inner zone duration	0.42086	0.81822	0.98342	0.26367	0.82063	0.81160
3	0	3. Inner zone duration	0.25316	0.83329	0.99844	0.49929	0.91767	0.97587
4	0	4. Inner zone duration	0.22519	0.77655	0.99959	0.54626	0.94897	0.91802
5	0	5. Inner zone duration	0.23570	0.75185	0.99951	0.52808	0.95132	0.77131
6	0	6. Inner zone duration	0.78136	0.50234	0.12915	0.00132	0.04422	0.40619
7	0	7. Inner zone duration		0.50315	0.22735	0.00337	0.08352	0.48752
8	0	8. Inner zone duration	0.50315		0.86969	0.08827	0.55631	0.86614
9	0	9. Inner zone duration	0.22735	0.86969		0.31497	0.45725	0.99767
10	1	1. Inner zone duration	0.00337	0.08827	0.31497		0.51658	0.20359
11	1	2. Inner zone duration	0.08352	0.55631	0.45725	0.51658		0.80775
12	1	3. Inner zone duration	0.48752	0.86614	0.99767	0.20359	0.80775	
13	1	4. Inner zone duration	0.42844	0.93499	0.94226	0.25880	0.62842	0.99387
14	1	5. Inner zone duration	0.43687	0.92123	0.99667	0.31135	0.81943	0.98535
15	1	6. Inner zone duration	0.72392	0.52272	0.63248	0.00174	0.07307	0.50267
16	1	7. Inner zone duration	0.46573	0.94214	0.98123	0.26568	0.72232	0.99406
17	1	8. Inner zone duration	0.82215	0.50469	0.13958	0.00004	0.00221	0.13471
18	1	9. Inner zone duration	0.68535	0.90893	0.94616	0.03389	0.40730	0.73780

Cell No.	MS	TIME	{13} 3.0708	{14} 3.2013	{15} 4.9636	{16} 3.1770	{17} 5.8559	{18} 4.2555
Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 13.688, df = 357.89								
1	0	1. Inner zone duration	0.57742	0.71724	0.06058	0.63393	0.00265	0.31604
2	0	2. Inner zone duration	0.99086	0.98195	0.64268	0.99102	0.33805	0.67342
3	0	3. Inner zone duration	0.99773	0.96277	0.60034	0.99710	0.16636	0.89141
4	0	4. Inner zone duration	0.99959	0.99745	0.54301	0.99970	0.15150	0.83007
5	0	5. Inner zone duration	0.99961	0.99821	0.52901	0.99966	0.16482	0.77747
6	0	6. Inner zone duration	0.30159	0.31921	0.82027	0.33911	0.72653	0.65770
7	0	7. Inner zone duration	0.42844	0.43687	0.72392	0.46573	0.82215	0.68535
8	0	8. Inner zone duration	0.93499	0.92123	0.52272	0.94214	0.50469	0.90893
9	0	9. Inner zone duration	0.94226	0.99667	0.63248	0.98123	0.13958	0.94616
10	1	1. Inner zone duration	0.25880	0.31135	0.00174	0.26568	0.00004	0.03389
11	1	2. Inner zone duration	0.62842	0.81943	0.07307	0.72232	0.00221	0.40730
12	1	3. Inner zone duration	0.99387	0.98535	0.50267	0.99406	0.13471	0.73780
13	1	4. Inner zone duration		0.98662	0.45589	0.89877	0.05256	0.89062
14	1	5. Inner zone duration	0.98662		0.46491	0.97678	0.06498	0.86865
15	1	6. Inner zone duration	0.45589	0.46491		0.49808	0.70832	0.67270
16	1	7. Inner zone duration	0.89877	0.97678	0.49808		0.06823	0.90197
17	1	8. Inner zone duration	0.05256	0.06498	0.70832	0.06823		0.39102
18	1	9. Inner zone duration	0.89062	0.86865	0.67270	0.90197	0.39102	

A5.1.4.1.3.10.6. Open Field P49 1 min time-bins repeated measures ANOVA Inner Zone frequency

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	2160.711	1	2160.711	248.753	0.00000
MS	0.820	1	0.820	0.0944	0.75978
Running	3.889	1	3.889	0.4478	0.50624
Lesion	25.115	1	25.115	2.8914	0.09480
MS*Running	38.800	1	38.800	4.4669	0.03919
MS*Lesion	2.841	1	2.841	0.3271	0.56975
Running*Lesion	0.892	1	0.892	0.1027	0.74986
MS*Running*Lesion	1.166	1	1.166	0.1343	0.71546
Error	469.053	54	8.686		
TIME	119.783	8	14.973	6.9046	0.00000
TIME*MS	22.019	8	2.752	1.2692	0.25767
TIME*Running	25.914	8	3.239	1.4938	0.15712
TIME*Lesion	13.824	8	1.728	0.7968	0.60565
TIME*MS*Running	12.656	8	1.582	0.7295	0.66545
TIME*MS*Lesion	24.825	8	3.103	1.4310	0.18125
TIME*Running*Lesion	11.840	8	1.480	0.6825	0.70708
TIME*MS*Running*Lesion	14.405	8	1.801	0.8304	0.57614
Error	936.806	432	2.169		

A5.1.4.1.3.10.7. Open Field P49 1min time-bins Repeated measures Inner Zone frequency post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 2.1685, df = 432.00

Cell No.	TIME	{1} .93548	{2} 2.0000	{3} 2.0000	{4} 1.8710	{5} 1.8065
1	1. Inner Zone frequen		0.00055	0.00081	0.00230	0.00285
2	2. Inner Zone frequen	0.00055		1.00000	0.62565	0.74459
3	3. Inner Zone frequen	0.00081	1.00000		0.87708	0.88435
4	4. Inner Zone frequen	0.00230	0.62565	0.87708		0.80730
5	5. Inner Zone frequen	0.00285	0.74459	0.88435	0.80730	
6	6. Inner Zone frequen	0.00001	0.13929	0.09407	0.05662	0.03716
7	7. Inner Zone frequen	0.00002	0.37207	0.17972	0.25938	0.23163
8	8. Inner Zone frequen	0.00003	0.42267	0.27933	0.25988	0.21224
9	9. Inner Zone frequen	0.00123	0.85777	0.93280	0.95004	0.95137

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 2.1685, df = 432.00

Cell No.	TIME	{6} 2.6129	{7} 2.3548	{8} 2.4032	{9} 1.7903
1	1. Inner Zone frequen	0.00001	0.00002	0.00003	0.00123
2	2. Inner Zone frequen	0.13929	0.37207	0.42267	0.85777
3	3. Inner Zone frequen	0.09407	0.17972	0.27933	0.93280
4	4. Inner Zone frequen	0.05662	0.25938	0.25988	0.95004
5	5. Inner Zone frequen	0.03716	0.23163	0.21224	0.95137
6	6. Inner Zone frequen		0.59225	0.42791	0.03947
7	7. Inner Zone frequen	0.59225		0.85485	0.26946
8	8. Inner Zone frequen	0.42791	0.85485		0.23548
9	9. Inner Zone frequen	0.03947	0.26946	0.23548	

A5.1.4.1.3.10.8. Open Field P49 1 min time-bins repeated measures ANOVA Maximum velocity

Effect	Repeated Measures Analysis of Variance (P49 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	4494543	1	4494543	203.5961	0.00000(
MS	23261	1	23261	1.0537	0.309231
Running	46836	1	46836	2.1216	0.151026
Lesion	83001	1	83001	3.7598	0.057732
MS*Running	6421	1	6421	0.2909	0.591877
MS*Lesion	10815	1	10815	0.4899	0.486967
Running*Lesion	1092	1	1092	0.0495	0.824845
MS*Running*Lesion	240	1	240	0.0109	0.917322
Error	1192092	54	22076		
TIME	36134	8	4517	3.0470	0.002404
TIME*MS	12038	8	1505	1.0151	0.423674
TIME*Running	21709	8	2714	1.8306	0.069586
TIME*Lesion	25389	8	3174	2.1409	0.031032
TIME*MS*Running	8901	8	1113	0.7505	0.646749
TIME*MS*Lesion	7802	8	975	0.6579	0.728658
TIME*Running*Lesion	19601	8	2450	1.6529	0.107963
TIME*MS*Running*Lesion	15871	8	1984	1.3383	0.222375
Error	640382	432	1482		

A5.1.4.1.3.10.9. Open Field P49 1min time-bins Repeated measures Maximum velocity post hoc Newman Keuls test (Time effect)

Cell No.	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Within MS = 1482.4, df = 432.00 TIME	{1} 77.960	{2} 88.857	{3} 84.496	{4} 82.681	{5} 88.166
1	1. Velocity max (cm/s		0.61455(	0.61162'	0.49474(	0.57816(
2	2. Velocity max (cm/s	0.61455(		0.92219(	0.89957(	0.92042(
3	3. Velocity max (cm/s	0.61162'	0.92219(		0.79302!	0.85620!
4	4. Velocity max (cm/s	0.49474(	0.89957(	0.79302!		0.85757:
5	5. Velocity max (cm/s	0.57816(	0.92042(	0.85620!	0.85757:	
6	6. Velocity max (cm/s	0.06417:	0.35773:	0.34285:	0.26306'	0.45694!
7	7. Velocity max (cm/s	0.27924!	0.51305.	0.70064:	0.63350'	0.73120:
8	8. Velocity max (cm/s	0.00631'	0.14070:	0.08181!	0.04976!	0.16526:
9	9. Velocity max (cm/s	0.55641'	0.96181(	0.71517!	0.80509'	0.86827.

Cell No.	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe Approximate Probabilities for Post Hoc Tests Error: Within MS = 1482.4, df = 432.00 TIME	{6} 98.318	{7} 93.380	{8} 103.65	{9} 87.019
1	1. Velocity max (cm/s	0.06417	0.27924	0.00631	0.55641
2	2. Velocity max (cm/s	0.35773	0.51305	0.14070	0.96181
3	3. Velocity max (cm/s	0.34285	0.70064	0.08181	0.71517
4	4. Velocity max (cm/s	0.26306	0.63350	0.04976	0.80509
5	5. Velocity max (cm/s	0.45694	0.73120	0.16526	0.86827
6	6. Velocity max (cm/s		0.47521	0.44054	0.47555
7	7. Velocity max (cm/s	0.47521		0.29795	0.79423
8	8. Velocity max (cm/s	0.44054	0.29795		0.15429
9	9. Velocity max (cm/s	0.47555	0.79423	0.15429	

10. Open Field P49 1min time-bins Repeated measures Maximum velocity post hoc Newman Keuls test (Time*Lesion)

Cell No.	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 3770.5, df = 123.16 Lesion	TIME	{1} 85.378	{2} 95.242	{3} 87.846	{4} 88.587	{5} 106.49	{6} 114.28
1	0	1. Velocity max (cm/s		0.85155	0.96551	0.98781	0.37734	0.07617
2	0	2. Velocity max (cm/s	0.85155		0.72984	0.49622	0.65859	0.29259
3	0	3. Velocity max (cm/s	0.96551	0.72984		0.93958	0.39832	0.09742
4	0	4. Velocity max (cm/s	0.98781	0.49622	0.93958		0.35602	0.09075
5	0	5. Velocity max (cm/s	0.37734	0.65859	0.39832	0.35602		0.42548
6	0	6. Velocity max (cm/s	0.07617	0.29259	0.09742	0.09075	0.42548	
7	0	7. Velocity max (cm/s	0.57608	0.53193	0.51109	0.39206	0.85925	0.54905
8	0	8. Velocity max (cm/s	0.00224	0.02999	0.00390	0.00398	0.14606	0.28119
9	0	9. Velocity max (cm/s	0.63362	0.78364	0.61369	0.53367	0.62806	0.40567
10	1	1. Velocity max (cm/s	0.98087	0.91534	0.98390	0.98681	0.58704	0.26623
11	1	2. Velocity max (cm/s	0.98106	0.98314	0.99698	0.99880	0.87630	0.62110
12	1	3. Velocity max (cm/s	0.99881	0.99283	0.99952	0.99975	0.90038	0.64666
13	1	4. Velocity max (cm/s	0.99395	0.97491	0.99674	0.99789	0.79296	0.47670
14	1	5. Velocity max (cm/s	0.98638	0.92146	0.98707	0.98897	0.58650	0.26187
15	1	6. Velocity max (cm/s	0.99742	0.99169	0.99929	0.99968	0.90382	0.66101
16	1	7. Velocity max (cm/s	0.99854	0.92224	0.87572	0.97734	0.82737	0.58476
17	1	8. Velocity max (cm/s	0.85285	0.96435	0.98604	0.99505	0.83727	0.57148
18	1	9. Velocity max (cm/s	0.98085	0.92930	0.98624	0.98946	0.63522	0.30945

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 3770.5, df = 123.16

Cell No.	Lesion	TIME	{7} 101.35	{8} 124.82	{9} 101.75	{10} 70.541	{11} 82.473	{12} 81.146
1	0	1. Velocity max (cm/s	0.57608	0.00224	0.63362	0.98087	0.98106	0.99881
2	0	2. Velocity max (cm/s	0.53193	0.02999	0.78364	0.91534	0.98314	0.99283
3	0	3. Velocity max (cm/s	0.51109	0.00390	0.61369	0.98390	0.99698	0.99952
4	0	4. Velocity max (cm/s	0.39206	0.00398	0.53367	0.98681	0.99880	0.99975
5	0	5. Velocity max (cm/s	0.85925	0.14606	0.62806	0.58704	0.87630	0.90038
6	0	6. Velocity max (cm/s	0.54905	0.28119	0.40567	0.26623	0.62110	0.64666
7	0	7. Velocity max (cm/s		0.11542	0.96790	0.74916	0.92910	0.95490
8	0	8. Velocity max (cm/s	0.11542		0.08514	0.04664	0.21858	0.22416
9	0	9. Velocity max (cm/s	0.96790	0.08514		0.76760	0.94868	0.96544
10	1	1. Velocity max (cm/s	0.74916	0.04664	0.76760		0.82722	0.69911
11	1	2. Velocity max (cm/s	0.92910	0.21858	0.94868	0.82722		0.98990
12	1	3. Velocity max (cm/s	0.95490	0.22416	0.96544	0.69911	0.98990	
13	1	4. Velocity max (cm/s	0.89270	0.12417	0.90917	0.79943	0.93735	0.65494
14	1	5. Velocity max (cm/s	0.75531	0.04450	0.77100	0.94343	0.85635	0.77678
15	1	6. Velocity max (cm/s	0.95281	0.24039	0.96536	0.74666	0.99053	0.90146
16	1	7. Velocity max (cm/s	0.84509	0.21887	0.90167	0.84649	0.99062	0.99802
17	1	8. Velocity max (cm/s	0.89066	0.19324	0.92159	0.88614	0.99902	0.99908
18	1	9. Velocity max (cm/s	0.78203	0.06003	0.80246	0.85802	0.83620	0.63684

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 3770.5, df = 123.16

Cell No.	Lesion	TIME	{13} 76.775	{14} 69.847	{15} 82.357	{16} 85.407	{17} 82.485	{18} 72.291
1	0	1. Velocity max (cm/s	0.99395	0.98638	0.99742	0.99854	0.85285	0.98085
2	0	2. Velocity max (cm/s	0.97491	0.92146	0.99169	0.92224	0.96435	0.92930
3	0	3. Velocity max (cm/s	0.99674	0.98707	0.99929	0.87572	0.98604	0.98624
4	0	4. Velocity max (cm/s	0.99789	0.98897	0.99968	0.97734	0.99505	0.98946
5	0	5. Velocity max (cm/s	0.79296	0.58650	0.90382	0.82737	0.83727	0.63522
6	0	6. Velocity max (cm/s	0.47670	0.26187	0.66101	0.58476	0.57148	0.30945
7	0	7. Velocity max (cm/s	0.89270	0.75531	0.95281	0.84509	0.89066	0.78203
8	0	8. Velocity max (cm/s	0.12417	0.04450	0.24039	0.21887	0.19324	0.06003
9	0	9. Velocity max (cm/s	0.90917	0.77100	0.96536	0.90167	0.92159	0.80246
10	1	1. Velocity max (cm/s	0.79943	0.94343	0.74666	0.84649	0.88614	0.85802
11	1	2. Velocity max (cm/s	0.93735	0.85635	0.99053	0.99062	0.99902	0.83620
12	1	3. Velocity max (cm/s	0.65494	0.77678	0.90146	0.99802	0.99908	0.63684
13	1	4. Velocity max (cm/s		0.89380	0.83572	0.97523	0.97750	0.64655
14	1	5. Velocity max (cm/s	0.89380		0.79657	0.85294	0.90206	0.96618
15	1	6. Velocity max (cm/s	0.83572	0.79657		0.99795	0.99990	0.73224
16	1	7. Velocity max (cm/s	0.97523	0.85294	0.99795		0.95199	0.88314
17	1	8. Velocity max (cm/s	0.97750	0.90206	0.99990	0.95199		0.90360
18	1	9. Velocity max (cm/s	0.64655	0.96618	0.73224	0.88314	0.90360	

A5.1.4.1.3.10.11. Open Field P49 1 min time-bins repeated measures ANOVA Mean velocity

Effect	Repeated Measures Analysis of Variance (P49 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	98647.62	1	98647.62	2205.672	0.00000(
MS	291.21	1	291.21	6.511	0.013583
Running	1087.76	1	1087.76	24.321	0.00000{
Lesion	55.83	1	55.83	1.248	0.268843
MS*Running	5.47	1	5.47	0.122	0.727878
MS*Lesion	2.82	1	2.82	0.063	0.802631
Running*Lesion	4.00	1	4.00	0.089	0.766101
MS*Running*Lesion	4.24	1	4.24	0.095	0.759283
Error	2415.12	54	44.72		
TIME	2282.38	8	285.30	24.053	0.00000(
TIME*MS	82.85	8	10.36	0.873	0.539152
TIME*Running	74.32	8	9.29	0.783	0.617704
TIME*Lesion	89.49	8	11.19	0.943	0.480514
TIME*MS*Running	23.35	8	2.92	0.246	0.981677
TIME*MS*Lesion	59.24	8	7.40	0.624	0.757598
TIME*Running*Lesion	65.88	8	8.24	0.694	0.696712
TIME*MS*Running*Lesion	33.86	8	4.23	0.357	0.942541
Error	5124.08	432	11.86		

A5.1.4.1.3.10.12. Open Field P49 1min time-bins Repeated measures Mean velocity post hoc Newman Keuls test (Time effect)

Cell No.	Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Within MS = 11.861, df = 432.00					
	TIME	{1} 15.641	{2} 16.902	{3} 14.854	{4} 13.423	{5} 12.244
1	1. Velocity mean (cm/s		0.04137	0.20340	0.00099	0.00002
2	2. Velocity mean (cm/s	0.04137		0.00267	0.00000	0.00002
3	3. Velocity mean (cm/s	0.20340	0.00267		0.02072	0.00024
4	4. Velocity mean (cm/s	0.00099	0.00000	0.02072		0.22515
5	5. Velocity mean (cm/s	0.00002	0.00002	0.00024	0.22515	
6	6. Velocity mean (cm/s	0.00001	0.00001	0.00072	0.17458	0.84699
7	7. Velocity mean (cm/s	0.00002	0.00002	0.00080	0.29005	0.68559
8	8. Velocity mean (cm/s	0.00002	0.00003	0.00002	0.00689	0.14502
9	9. Velocity mean (cm/s	0.00003	0.00001	0.00002	0.00002	0.00086

Newman-Keuls test; variable DV_1 (P49 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 11.861, df = 432.00

Cell No.	TIME	{6} 12.583	{7} 12.494	{8} 11.342	{9} 10.002
1	1. Velocity mean (cm/s	0.00001	0.00002	0.00002	0.00003
2	2. Velocity mean (cm/s	0.00001	0.00002	0.00003	0.00001
3	3. Velocity mean (cm/s	0.00072	0.00080	0.00002	0.00002
4	4. Velocity mean (cm/s	0.17458	0.29005	0.00689	0.00002
5	5. Velocity mean (cm/s	0.84699	0.68559	0.14502	0.00086
6	6. Velocity mean (cm/s		0.88539	0.18554	0.00030
7	7. Velocity mean (cm/s	0.88539		0.14980	0.00033
8	8. Velocity mean (cm/s	0.18554	0.14980		0.03029
9	9. Velocity mean (cm/s	0.00030	0.00033	0.03029	

A5.1.4.2.1.1. Open Field P63 Full Ten Minutes Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 Distance moved Tota (cm)	5 Arena duration (s)	6 In zone Inne zone duration (s)	7 In zone Inner zone frequency	8 In zone Inner zone latency (s)
154	1	0	1	5180.8487	498.333	10.16666	8	18.66665
122	1	1	0	5485.4715	498.333	19.16665	12	33.99998
197	1	0	0	5174.7044	498.333	22.83332	17	15.1666
222	0	1	0	6039.4058	498.333	81.66663	29	20.16665
193	0	0	1	5391.0805	498.333	45.49998	30	14.99999
203	0	1	1	4733.9733	498.333	32.49998	16	115.1666
167	0	0	0	7491.2421	498.333	66.99997	27	61.16664
182	1	1	1	5507.1782	498.333	28.66665	8	22.16665
209	1	0	1	7411.7747	498.333	40.99998	14	35.33331
216	1	1	0	4063.1653	498.333	60.49997	23	22.9999
144	1	0	0	6669.2330	498.333	48.16665	29	22.33332
234	0	0	1	3375.9033	498.333	13.66665	8	231.9999
169	0	0	0	3780.0953	498.333	10.33332	10	26.83332
117	0	0	1	2462.3724	498.333	23.33332	11	4.16666
188	0	1	1	3514.7222	498.333	5.16666	4	117.3332
131	0	1	0	4264.7853	498.333	5.83333	5	22.49999
126	0	0	1	6182.0848	498.333	30.8333	17	31.49998
160	0	0	0	1992.3165	498.333	0	0	498.3331
157	1	0	1	5968.4388	498.333	39.66665	16	32.3333
191	0	1	1	5204.0135	498.333	14.16666	11	64.33330
220	1	1	1	2975.0818	498.333	0	0	498.3331
138	1	1	0	4117.7391	498.333	18.49999	12	82.49996
186	1	0	0	4216.8308	498.333	11.16666	5	87.16663
227	0	0	1	2461.0583	498.333	0	0	498.3331
129	1	1	1	5022.1972	498.333	2.33333	2	141.3332
207	0	1	1	3020.0074	498.333	12.49999	6	142.6666
164	1	1	0	5743.232	498.333	18.66665	13	72.66663
141	1	0	1	7286.2253	498.333	41.83331	29	59.83330
174	0	1	0	6131.7136	498.333	46.83331	29	60.33330
148	1	0	0	2653.2169	498.333	2.33333	1	407.4998
176	0	0	0	5276.5757	498.333	24.83332	11	103.6666
196	1	1	0	1811.2809	498.333	3.16666	1	320.1665
139	1	0	0	4121.9007	498.333	13.16666	7	135.8332
198	1	1	1	4071.7427	498.333	0	0	498.3331
143	1	0	1	3859.0027	498.333	2	4	25.49998
145	1	1	1	3389.6486	498.333	0	0	498.3331
190	1	0	0	6246.6863	498.333	24.16665	10	185.8332
232	0	1	0	5197.5539	498.333	26.49998	10	140.1666
210	0	1	1	4751.6474	498.333	62.66663	29	28.16665
137	0	1	1	4397.3859	498.333	0	0	498.3331
171	0	0	0	5534.8484	498.333	11.33332	6	40.83331
219	0	0	0	6168.0790	498.333	42.49998	15	121.6666
205	0	0	1	5211.6158	498.333	2.49999	3	412.166

	1 MS	2 Running	3 Lesion	4 In zone Outer zone duration (s)	5 Velocity Maximum (cm/s)	6 Velocity Mean (cm/s)
154	1	0	1	488.16647	111.63159	10.399834
122	1	1	0	479.16647	93.114891	11.011322
197	1	0	0	475.49980	89.952548	10.387500
222	0	1	0	416.66649	101.49094	12.123267
193	0	0	1	452.83314	91.900382	10.821845
203	0	1	1	465.83314	88.904716	9.5027946
167	0	0	0	431.33316	96.938148	15.037628
182	1	1	1	469.66647	82.788181	11.054895
209	1	0	1	457.33314	94.374982	14.878108
216	1	1	0	437.83316	83.792310	8.1562400
144	1	0	0	450.16648	89.728420	13.387559
234	0	0	1	484.66647	75.396406	6.7766572
169	0	0	0	487.99980	86.978368	7.5880165
117	0	0	1	474.9998	78.4277	4.9428707
188	0	1	1	493.16646	80.236900	7.0553165
131	0	1	0	492.499	75.605145	8.560964
126	0	0	1	467.49981	84.102860	12.409677
160	0	0	0	498.33313	80.424299	3.9992987
157	1	0	1	458.66648	97.021374	11.980812
191	0	1	1	484.16647	85.538278	10.44633
220	1	1	1	498.33313	81.238744	5.9720636
138	1	1	0	479.83314	104.88610	8.2657896
186	1	0	0	487.16647	89.990419	8.4647024
227	0	0	1	498.33313	78.816481	4.9402327
129	1	1	1	495.999	74.750178	10.081363
207	0	1	1	485.83313	73.854630	6.0622454
164	1	1	0	479.66647	84.26134	11.528741
141	1	0	1	456.49981	88.088712	14.626084
174	0	1	0	451.49981	76.646426	12.308563
148	1	0	0	495.99980	75.437278	5.3259645
176	0	0	0	473.49981	124.44303	10.591993
196	1	1	0	495.16646	68.044988	3.635894
139	1	0	0	485.16647	86.375667	8.2741431
198	1	1	1	498.33313	88.451553	8.1734583
143	1	0	1	496.33313	81.745910	7.746411
145	1	1	1	498.33313	72.555368	6.8042490
190	1	0	0	474.16647	95.419893	12.539355
232	0	1	0	471.83314	91.494053	10.433367
210	0	1	1	435.66649	105.20798	9.5382725
137	0	1	1	498.33313	152.14692	8.827141
171	0	0	0	486.99980	78.249015	11.110439
219	0	0	0	455.83315	97.295432	12.38156
205	0	0	1	495.83313	91.742254	10.461595

	1 MS	2 Running	3 Lesion	4 Distance moved Tota (cm)	5 Arena duration (s)	6 In zone Inne zone duration (s)	7 In zone Inner zone frequency	8 In zone Inner zo latency (
250	1	0	0	5654.2304	498.333	44.49998	14	16.8333
271	1	1	0	3650.1385	498.333	11.99999	9	171.833
305	0	1	0	3736.1791	498.333	0	0	498.333
301	0	1	1	5102.0604	498.333	0	0	498.333
306	1	1	1	5910.6784	498.333	35.16664	26	7.9999
309	1	0	1	5738.7170	498.333	54.66664	26	9.4999
311	0	0	0	5396.6834	498.333	75.16663	27	9.9999
315	0	0	0	6869.2733	498.333	69.83330	28	19.8333
312	0	1	1	3167.5898	498.333	2.33333	2	122.333
314	0	1	0	2556.1168	498.333	0.66666	2	16.4999
313	0	1	0	3974.4385	497.666	2.49999	2	195.833
317	1	1	1	2889.9114	498.333	0	0	498.333
318	1	1	0	5409.0403	498.333	46.33331	21	14.666
319	1	1	0	6364.9090	498.333	51.49998	34	24.499
320	1	1	1	4819.4570	498.333	4.00000	7	82.9999
324	0	1	0	4590.8897	498.333	60.83330	25	22.6666
323	0	1	0	4295.1302	498.333	20.83332	9	4.6666
322	0	0	1	6205.618	498.333	33.99998	17	11.4999

	1 MS	2 Running	3 Lesion	4 In zone Outer zone duration (s)	5 Velocity Maximum (cm/s)	6 Velocity Mean (cm/s)
250	1	0	0	453.83314	81.398289	11.350082
271	1	1	0	486.33313	82.102846	7.3271464
305	0	1	0	498.33313	91.396981	7.4998610
301	0	1	1	498.33313	78.93101	10.241677
306	1	1	1	463.16648	92.768453	11.864866
309	1	0	1	443.66648	69.857600	11.519677
311	0	0	0	423.16649	63.517110	10.833092
315	0	0	0	428.49982	246.09697	13.789111
312	0	1	1	495.99980	64.767064	6.3584964
314	0	1	0	497.66646	67.405900	5.1310496
313	0	1	0	495.16646	79.364002	7.9888245
317	1	1	1	498.33313	65.122107	5.8010962
318	1	1	0	451.99982	82.521189	10.857897
319	1	1	0	446.83315	79.421393	12.776670
320	1	1	1	494.33313	82.617786	9.6743908
324	0	1	0	437.49982	79.613424	9.2155737
323	0	1	0	477.49980	80.119605	8.6218775
322	0	0	1	464.33314	75.329655	12.456917

A5.1.4.2.1.2. Open Field P63 Full Ten Minutes Distance Travelled Descriptive Statistics

Effect	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
	Level o Factor	Level of Factor	Level of Factor	N	Distance moved Total (cm Mean	Distance moved Total (cm) Std.Dev.	Distance moved Total (cm Std.Err	Distance moved Total (cm) -95.00%	Distance moved Total (cm +95.00%
Total				61	4752.28	1380.52	176.757	4398.71	5105.84
MS	0			32	4639.88	1377.23	243.462	4143.34	5136.43
MS	1			29	4876.29	1397.71	259.548	4344.63	5407.96
Running	0			28	5142.16	1559.65	294.746	4537.39	5746.93
Running	1			33	4421.46	1129.22	196.573	4021.06	4821.87
Lesion	0			32	4833.66	1409.82	249.223	4325.36	5341.95
Lesion	1			29	4662.48	1366.55	253.762	4142.67	5182.29
MS*Running	0	0		15	4919.92	1702.83	439.669	3976.92	5862.92
MS*Running	0	1		17	4392.80	999.704	242.463	3878.80	4906.80
MS*Running	1	0		13	5398.60	1399.02	388.018	4553.18	6244.02
MS*Running	1	1		16	4451.93	1285.44	321.362	3766.96	5136.89
MS*Lesion	0	0		17	4899.72	1461.47	354.460	4148.30	5651.14
MS*Lesion	0	1		15	4345.40	1258.58	324.965	3648.42	5042.39
MS*Lesion	1	0		15	4758.78	1395.97	360.440	3985.71	5531.85
MS*Lesion	1	1		14	5002.20	1440.85	385.085	4170.28	5834.13
Running*Lesion	0	0		15	5149.72	1546.28	399.247	4293.42	6006.02
Running*Lesion	0	1		13	5133.44	1638.14	454.339	4143.52	6123.36
Running*Lesion	1	0		17	4554.77	1258.00	305.110	3907.97	5201.58
Running*Lesion	1	1		16	4279.83	995.34	248.837	3749.44	4810.21
MS*Running*Les	0	0	0	8	5313.63	1745.69	617.196	3854.20	6773.07
MS*Running*Les	0	0	1	7	4469.96	1663.60	628.782	2931.38	6008.53
MS*Running*Les	0	1	0	9	4531.80	1132.12	377.374	3661.57	5402.02
MS*Running*Les	0	1	1	8	4236.42	875.65	309.590	3504.35	4968.49
MS*Running*Les	1	0	0	7	4962.40	1395.29	527.370	3671.97	6252.82
MS*Running*Les	1	0	1	6	5907.50	1335.68	545.291	4505.78	7309.21
MS*Running*Les	1	1	0	8	4580.62	1466.65	518.539	3354.47	5806.77
MS*Running*Les	1	1	1	8	4323.23	1162.70	411.079	3351.18	5295.28

A5.1.4.2.1.3. Open Field P63 Full Ten Minutes Distance Travelled ANOVA

Effect	Univariate Tests of Significance for Distance moved Total (cm) (Open Field 10 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1.381158E+0	1	1.381158E+0	741.800	0.00000
MS	1.403979E+0	1	1.403979E+0	0.7541	0.38911
Running	8.358171E+0	1	8.358171E+0	4.4891	0.03881
Lesion	1.915446E+0	1	1.915446E+0	0.1029	0.74966
MS*Running	8.498129E+0	1	8.498129E+0	0.4564	0.50223
MS*Lesion	3.137857E+0	1	3.137857E+0	1.6853	0.19984
Running*Lesion	4.024085E+0	1	4.024085E+0	0.2161	0.64391
MS*Running*Lesion	2.882254E+0	1	2.882254E+0	1.548	0.21890
Error	9.868063E+0	53	1.861899E+0		

A5.1.4.2.1.4. Open Field P63 Full Ten Minutes Distance Travelled post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable Distance moved Total (cm) (Open Field 10 min Approximate Probabilities for Post Hoc Tests Error: Between MS = 1862E3, df = 53.000		
Cell No.	Running	{1} 5142.2	{2} 4421.5
1	0		0.044847
2	1	0.044847	

A5.1.4.2.1.5. Open Field P63 Full Ten Minutes Inner Zone Duration Descriptive Statistics

	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	In zone Inner zone duration (s) Mean	In zone Inner zone duration (s) Std.Dev.	In zone Inner zone duration (s) Std.Err	In zone Inner zone duration (s) -95.00%	In zone Inner zone duration (s) +95.00%
Total				61	24.2868	22.8330	2.9234	18.4390	30.1346
MS	0			32	25.8072	25.6456	4.5335	16.5610	35.0535
MS	1			29	22.6091	19.5819	3.6362	15.1606	30.0577
Running	0			28	28.8035	22.0837	4.1734	20.2403	37.3667
Running	1			33	20.4545	23.0877	4.0190	12.2679	28.6410
Lesion	0			32	29.4635	24.7671	4.3782	20.5340	38.3930
Lesion	1			29	18.5747	19.3293	3.5893	11.2222	25.9272
MS*Running	0	0		15	30.0555	25.4084	6.5604	15.9848	44.1262
MS*Running	0	1		17	22.0588	26.0298	6.3131	8.6754	35.4421
MS*Running	1	0		13	27.3589	18.4363	5.1133	16.2180	38.4999
MS*Running	1	1		16	18.7499	20.2093	5.0523	7.9811	29.5188
MS*Lesion	0	0		17	32.1568	29.4058	7.1319	17.0377	47.2759
MS*Lesion	0	1		15	18.6111	19.0699	4.9238	8.0505	29.1716
MS*Lesion	1	0		15	26.4111	18.7413	4.8389	16.0325	36.7897
MS*Lesion	1	1		14	18.5357	20.3246	5.4319	6.8006	30.2707
Running*Lesion	0	0		15	31.1555	25.1041	6.4818	17.2533	45.0577
Running*Lesion	0	1		13	26.0897	18.6322	5.1676	14.8303	37.3490
Running*Lesion	1	0		17	27.9705	25.1394	6.0972	15.0450	40.8960
Running*Lesion	1	1		16	12.4687	18.1931	4.5482	2.7743	22.1631
MS*Running*Les	0	0	0	8	37.6249	30.1158	10.6475	12.4474	62.8024
MS*Running*Les	0	0	1	7	21.4047	16.8684	6.3756	5.8040	37.0054
MS*Running*Les	0	1	0	9	27.2962	29.6536	9.8845	4.5024	50.0900
MS*Running*Les	0	1	1	8	16.1666	21.6516	7.6550	-1.9345	34.2678
MS*Running*Les	1	0	0	7	23.7619	17.1112	6.4674	7.9366	39.5871
MS*Running*Les	1	0	1	6	31.5555	20.6192	8.4177	9.9170	53.1940
MS*Running*Les	1	1	0	8	28.7291	20.9367	7.4022	11.2255	46.2327
MS*Running*Les	1	1	1	8	8.7708	14.4642	5.1138	-3.3215	20.8632

A5.1.4.2.1.6. Open Field P63 Full Ten Minutes Inner Zone Duration ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone duration (s) (Open Field 10 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	35868.66	1	35868.66	70.96675	0.000000
MS	88.02	1	88.02	0.17415	0.678133
Running	1047.97	1	1047.97	2.07343	0.155765
Lesion	1468.18	1	1468.18	2.90482	0.094172
MS*Running	4.76	1	4.76	0.00942	0.923032
MS*Lesion	216.82	1	216.82	0.42899	0.515319
Running*Lesion	482.88	1	482.88	0.95538	0.332793
MS*Running*Lesion	1014.24	1	1014.24	2.00669	0.162458
Error	26787.74	53	505.43		

A5.1.4.2.1.7. Open Field P63 Full Ten Minutes Inner Zone Frequency Descriptive Statistics

Effect	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
	Level o Factor	Level of Factor	Level of Factor	N	In zone Inner zone frequency Mean	In zone Inner zone frequency Std.Dev.	In zone Inner zone frequency Std.Err	In zone Inner zone frequency -95.00%	In zone Inner zone frequency +95.00%
Total				61	12.0819	10.2425	1.31142	9.4587	14.7052
MS	0			32	12.1562	10.5680	1.86819	8.3460	15.9664
MS	1			29	12.0000	10.0569	1.86753	8.1745	15.8254
Running	0			28	13.9285	9.6491	1.82351	10.1870	17.6701
Running	1			33	10.5151	10.6128	1.84746	6.7520	14.2783
Lesion	0			32	13.8437	10.2834	1.81787	10.1361	17.5513
Lesion	1			29	10.1379	10.0132	1.85942	6.3290	13.9467
MS*Running	0	0		15	14.0000	10.1980	2.63312	8.3525	19.6474
MS*Running	0	1		17	10.5294	10.9265	2.65008	4.9114	16.1473
MS*Running	1	0		13	13.8461	9.3883	2.60385	8.1728	19.5194
MS*Running	1	1		16	10.5000	10.6270	2.65675	4.8372	16.1627
MS*Lesion	0	0		17	13.8235	11.1704	2.70923	8.0802	19.5668
MS*Lesion	0	1		15	10.2666	9.8739	2.54944	4.7986	15.7346
MS*Lesion	1	0		15	13.8666	9.5683	2.47052	8.5679	19.1654
MS*Lesion	1	1		14	10.0000	10.5320	2.81479	3.9190	16.0810
Running*Lesion	0	0		15	13.8000	9.8865	2.55268	8.3250	19.2749
Running*Lesion	0	1		13	14.0769	9.7678	2.70910	8.1742	19.9795
Running*Lesion	1	0		17	13.8823	10.9252	2.64975	8.2651	19.4995
Running*Lesion	1	1		16	6.9375	9.2985	2.32463	1.9826	11.8923
MS*Running*Les	0	0	0	8	15.5000	10.7038	3.78436	6.5514	24.4486
MS*Running*Les	0	0	1	7	12.2857	10.1277	3.82793	2.9191	21.6523
MS*Running*Les	0	1	0	9	12.3333	12.0000	4.00000	3.1093	21.5573
MS*Running*Les	0	1	1	8	8.5000	9.9713	3.52541	0.1637	16.8362
MS*Running*Les	1	0	0	7	11.8571	9.2813	3.50800	3.2733	20.4409
MS*Running*Les	1	0	1	6	16.1666	9.8064	4.00347	5.8754	26.4579
MS*Running*Les	1	1	0	8	15.6250	10.0844	3.56539	7.1941	24.0558
MS*Running*Les	1	1	1	8	5.3750	8.9592	3.16756	-2.1151	12.8651

A5.1.4.2.1.8. Open Field P63 Full Ten Minutes Inner Zone Frequency ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone frequency (Open Field 10 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	8964.926	1	8964.926	85.8140	0.00000
MS	0.154	1	0.154	0.00147	0.96951
Running	183.672	1	183.672	1.75815	0.19054
Lesion	158.620	1	158.620	1.51834	0.22331
MS*Running	0.005	1	0.005	0.00005	0.99461
MS*Lesion	1.153	1	1.153	0.01103	0.91674
Running*Lesion	216.634	1	216.634	2.07367	0.15574
MS*Running*Lesion	182.735	1	182.735	1.74917	0.19166
Error	5536.869	53	104.469		

A5.1.4.2.1.9. Open Field P63 Full Ten Minutes Inner Zone Latency Descriptive Statistics

Effect	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
	Level c Factor	Level of Factor	Level of Factor	N	In zone Inner zone latency (s) Mean	In zone Inner zone latency (s) Std.Dev.	In zone Inner zone latency (s) Std.Err	In zone Inner zone latency (s) -95.00%	In zone Inner zone latency (s) +95.00%
Total				61	142.587	172.788	22.1233	98.334	186.840
MS	0			32	145.463	175.283	30.9860	82.267	208.660
MS	1			29	139.413	173.034	32.1317	73.594	205.232
Running	0			28	112.101	153.558	29.0197	52.557	171.644
Running	1			33	168.454	185.959	32.3714	102.516	234.392
Lesion	0			32	108.671	137.789	24.3580	58.993	158.350
Lesion	1			29	180.011	200.478	37.2279	103.753	256.269
MS*Running	0	0		15	139.133	181.962	46.9824	38.365	239.900
MS*Running	0	1		17	151.049	174.603	42.3474	61.276	240.821
MS*Running	1	0		13	80.910	111.620	30.9579	13.458	148.361
MS*Running	1	1		16	186.947	201.360	50.3401	79.650	294.245
MS*Lesion	0	0		17	109.617	155.709	37.7652	29.558	189.676
MS*Lesion	0	1		15	186.088	192.340	49.6619	79.574	292.603
MS*Lesion	1	0		15	107.600	119.703	30.9073	41.310	173.889
MS*Lesion	1	1		14	173.499	215.958	57.7173	48.809	298.190
Running*Lesion	0	0		15	116.866	147.185	38.0032	35.357	198.375
Running*Lesion	0	1		13	106.602	166.492	46.1767	5.992	207.213
Running*Lesion	1	0		17	101.441	133.083	32.2774	33.015	169.866
Running*Lesion	1	1		16	239.656	210.674	52.6686	127.395	351.916
MS*Running*Les	0	0	0	8	110.291	161.773	57.1954	-24.954	245.537
MS*Running*Les	0	0	1	7	172.095	210.590	79.5958	-22.668	366.859
MS*Running*Les	0	1	0	9	109.018	159.972	53.3240	-13.947	231.984
MS*Running*Les	0	1	1	8	198.333	188.704	66.7170	40.572	356.093
MS*Running*Les	1	0	0	7	124.380	141.041	53.3087	-6.061	254.822
MS*Running*Les	1	0	1	6	30.194	17.277	7.0536	12.062	48.326
MS*Running*Les	1	1	0	8	92.916	105.256	37.2137	4.920	180.913
MS*Running*Les	1	1	1	8	280.979	235.787	83.3633	83.856	478.102

A5.1.4.2.1.10. Open Field P63 Full Ten Minutes Inner Zone Latency ANOVA

Effect	Univariate Tests of Significance for In zone Inner zone latency (s) (Open Field 10 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1175742	1	1175742	41.79788	0.000000
MS	3530	1	3530	0.12548	0.724573
Running	56113	1	56113	1.99481	0.163684
Lesion	56439	1	56439	2.00641	0.162486
MS*Running	35519	1	35519	1.26270	0.266204
MS*Lesion	3081	1	3081	0.10953	0.741982
Running*Lesion	90223	1	90223	3.20744	0.079015
MS*Running*Lesion	61017	1	61017	2.16917	0.146716
Error	1490849	53	28129		

A5.1.4.2.1.11. Open Field P63 Full Ten Minutes Maximum Velocity Descriptive Statistics

	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	Velocity Maximum (cm/s) Mean	Velocity Maximum (cm/s) Std.Dev.	Velocity Maximum (cm/s) Std.Err	Velocity Maximum (cm/s) -95.00%	Velocity Maximum (cm/s) +95.00%
Total				61	88.390	24.9841	3.1988	81.9921	94.789
MS	0			32	91.324	33.0433	5.8412	79.4110	103.237
MS	1			29	85.153	10.3949	1.9302	81.1997	89.107
Running	0			28	92.881	32.4511	6.1327	80.2982	105.464
Running	1			33	84.580	15.7872	2.7482	78.9827	90.178
Lesion	0			32	90.735	30.7284	5.4320	79.6564	101.814
Lesion	1			29	85.804	16.7023	3.1015	79.4507	92.157
MS*Running	0	0		15	96.643	43.6389	11.2675	72.4774	120.810
MS*Running	0	1		17	86.630	19.9808	4.8460	76.3576	96.904
MS*Running	1	0		13	88.540	10.4674	2.9031	82.2147	94.865
MS*Running	1	1		16	82.402	9.7997	2.4499	77.1804	87.624
MS*Lesion	0	0		17	95.122	41.4570	10.0548	73.8070	116.437
MS*Lesion	0	1		15	87.020	20.3988	5.2669	75.7237	98.316
MS*Lesion	1	0		15	85.763	8.7602	2.2618	80.9119	90.614
MS*Lesion	1	1		14	84.500	12.2147	3.2645	77.4482	91.553
Running*Lesion	0	0		15	98.816	42.8926	11.0748	75.0631	122.569
Running*Lesion	0	1		13	86.033	11.3219	3.1401	79.1917	92.875
Running*Lesion	1	0		17	83.604	10.2182	2.4782	78.3510	88.858
Running*Lesion	1	1		16	85.617	20.4477	5.1119	74.7216	96.513
MS*Running*Les	0	0	0	8	109.242	58.1032	20.5426	60.6672	157.818
MS*Running*Les	0	0	1	7	82.245	7.1638	2.7076	75.6196	88.870
MS*Running*Les	0	1	0	9	82.570	10.3327	3.4442	74.6282	90.513
MS*Running*Les	0	1	1	8	91.198	27.3034	9.6532	68.3721	114.024
MS*Running*Les	1	0	0	7	86.900	6.6004	2.4947	80.7959	93.004
MS*Running*Les	1	0	1	6	90.453	14.2311	5.8098	75.5186	105.388
MS*Running*Les	1	1	0	8	84.768	10.6637	3.7702	75.8529	93.683
MS*Running*Les	1	1	1	8	80.036	8.9038	3.1479	72.5927	87.480

A5.1.4.2.1.12. Open Field P63 Full Ten Minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for Velocity Maximum (cm/s) (Open Field 10 min Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	470559.8	1	470559.8	764.1458	0.000000
MS	501.7	1	501.7	0.8147	0.370817
Running	861.4	1	861.4	1.3989	0.242186
Lesion	359.3	1	359.3	0.5835	0.448323
MS*Running	25.1	1	25.1	0.0408	0.840680
MS*Lesion	277.9	1	277.9	0.4513	0.504644
Running*Lesion	702.9	1	702.9	1.1414	0.290192
MS*Running*Lesion	1813.0	1	1813.0	2.9441	0.092032
Error	32637.3	53	615.8		

A5.1.4.2.1.13. Open Field P63 Full Ten Minutes Mean Velocity Descriptive Statistics

Effect	Descriptive Statistics (Open Field 10 mins P63 in Workbook1)								
	Level o Factor	Level of Factor	Level of Factor	N	Velocity Mean (cm/s) Mean	Velocity Mean (cm/s) Std.Dev.	Velocity Mean (cm/s) Std.Err	Velocity Mean (cm/s) -95.00%	Velocity Mean (cm/s) +95.00%
Total				61	9.5397	2.77110	0.35480	8.83000	10.2494
MS	0			32	9.3142	2.76443	0.48868	8.31758	10.3109
MS	1			29	9.7884	2.80570	0.52100	8.72126	10.8557
Running	0			28	10.3221	3.13078	0.59166	9.10819	11.5361
Running	1			33	8.8758	2.26663	0.39457	8.07209	9.6795
Lesion	0			32	9.7032	2.82981	0.50024	8.68297	10.7234
Lesion	1			29	9.3592	2.74316	0.50939	8.31584	10.4027
MS*Running	0	0		15	9.8760	3.41820	0.88257	7.98312	11.7690
MS*Running	0	1		17	8.8185	2.00649	0.48664	7.78692	9.8502
MS*Running	1	0		13	10.8369	2.80833	0.77889	9.13988	12.5340
MS*Running	1	1		16	8.9366	2.58036	0.64509	7.56165	10.3116
MS*Lesion	0	0		17	9.8361	2.93329	0.71142	8.32798	11.3443
MS*Lesion	0	1		15	8.7228	2.52643	0.65232	7.32371	10.1219
MS*Lesion	1	0		15	9.5526	2.80223	0.72353	8.00077	11.1044
MS*Lesion	1	1		14	10.0412	2.89232	0.77300	8.37126	11.7112
Running*Lesion	0	0		15	10.3373	3.10394	0.80143	8.61845	12.0562
Running*Lesion	0	1		13	10.3046	3.28834	0.91202	8.31754	12.2918
Running*Lesion	1	0		17	9.1437	2.52496	0.61239	7.84549	10.4419
Running*Lesion	1	1		16	8.5911	1.99802	0.49950	7.52649	9.6558
MS*Running*Les	0	0	0	8	10.6663	3.50424	1.23893	7.73677	13.5960
MS*Running*Les	0	0	1	7	8.9728	3.33945	1.26219	5.88435	12.0613
MS*Running*Les	0	1	0	9	9.0981	2.27192	0.75730	7.35179	10.8445
MS*Running*Les	0	1	1	8	8.5040	1.75775	0.62146	7.03451	9.9735
MS*Running*Les	1	0	0	7	9.9613	2.80085	1.05862	7.37097	12.5516
MS*Running*Les	1	0	1	6	11.8584	2.68120	1.09459	9.04473	14.6722
MS*Running*Les	1	1	0	8	9.1949	2.94409	1.04089	6.73363	11.6562
MS*Running*Les	1	1	1	8	8.6783	2.33397	0.82518	6.72704	10.6295

A5.1.4.2.1.14. Open Field P63 Full Ten Minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for Velocity Mean (cm/s) (Open Field 10 min Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	5565.547	1	5565.547	741.8683	0.000000
MS	5.652	1	5.652	0.7534	0.389324
Running	33.666	1	33.666	4.4875	0.038849
Lesion	0.774	1	0.774	0.1032	0.749343
MS*Running	3.429	1	3.429	0.457(	0.501960
MS*Lesion	12.652	1	12.652	1.6865	0.199686
Running*Lesion	1.624	1	1.624	0.2165	0.643601
MS*Running*Lesion	11.606	1	11.606	1.5471	0.219043
Error	397.61(	53	7.502		

A5.1.4.2.1.15. Open Field P63 Full Ten Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Velocity Mean (cm/s) (Open Field 10 mins
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 7.5021, df = 53.000

Cell No.	Running	{1} 10.322	{2} 8.8758
1	0		0.044887
2	1	0.044887	

A5.1.4.2.2.1.1. Open Field P63 Five Minute Time-bins Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Zon frequency
227	0	0	1	1959.61397	249	0	0
129	1	1	1	3213.15441	249	2.333333	2
207	0	1	1	2458.07702	249	12.499996	6
164	1	1	0	3213.91036	249	6.166664	6
141	1	0	1	4201.04874	249	16.333327	12
174	0	1	0	3925.27486	249	22.833424	16
148	1	0	0	1305.73937	249	0	0
176	0	0	0	3234.63398	249	12.000094	4
154	1	0	1	3393.72325	249	7.999996	7
122	1	1	0	3707.24418	249	17.666661	9
197	1	0	0	3718.83781	249	17.166659	13
222	0	1	0	3927.17193	249	61.333309	19
193	0	0	1	3905.0084	249	31.333323	23
203	0	1	1	3035.19419	249	20.999989	8
167	0	0	0	4955.54568	249	38.999984	16
182	1	1	1	3317.65353	249	2.5	2
209	1	0	1	5033.74686	249	22.666658	9
216	1	1	0	3102.146	249	49.666646	18
144	1	0	0	4273.09883	249	28.833426	19
234	0	0	1	2064.97855	249	2.999998	2
169	0	0	0	2141.48953	249	5.83333	4
117	0	0	1	869.422143	249	2.499998	3
188	0	1	1	2102.61487	249	1.333333	1
131	0	1	0	3301.67049	249	5.833333	5
126	0	0	1	4073.36326	249	10.499996	8
160	0	0	0	960.450188	249	0	0
157	1	0	1	3331.97071	249	8.33333	7
191	0	1	1	3194.12534	249	7.83333	5
220	1	1	1	1860.39094	249	0	0
138	1	1	0	2758.00252	249	10.166661	8
186	1	0	0	2521.28037	249	1.499999	2
196	1	1	0	1152.7375	249	0	0
139	1	0	0	2454.73826	249	8.166663	5
198	1	1	1	2388.15963	249	0	0
143	1	0	1	2688.71724	249	1.833333	3
145	1	1	1	1670.40217	249	0	0
190	1	0	0	3756.08484	249	4.666664	2
232	0	1	0	3056.98268	241	4.666665	2
210	0	1	1	3101.44265	241	27.666654	20
137	0	1	1	3037.39236	241	0	0
171	0	0	0	3436.93985	241	1.833333	3
219	0	0	0	3651.38317	241	8.999995	5
250	1	0	0	3828.94527	249	7.333331	6
271	1	1	0	2367.14288	249	6.166664	3

	1 MS	2 Running	3 Lesion	4 1. Velocity ma (cm/s)	5 1. Velocity mean (cm/s)	6 2. Distance moved
227	0	0	1	78.8164817	7.86993842	501.124012
129	1	1	1	74.3582327	12.9042405	1808.9106
207	0	1	1	73.8546308	9.87179912	561.87239
164	1	1	0	78.0523492	12.9072759	2529.26054
141	1	0	1	84.8018996	16.8716877	3071.06227
174	0	1	0	76.6464266	15.764162	2205.97589
148	1	0	0	74.5554291	5.24393541	1347.40706
176	0	0	0	74.1687609	12.9905037	2041.37243
154	1	0	1	73.7712365	13.6294162	1778.58024
122	1	1	0	93.1148914	14.8885367	1778.08575
197	1	0	0	89.9525484	14.9350974	1455.7162
222	0	1	0	101.490943	15.7717801	2103.28719
193	0	0	1	91.9003824	15.6827711	1485.12564
203	0	1	1	88.9047167	12.1895407	1698.62491
167	0	0	0	96.9381486	19.9017977	2531.89448
182	1	1	1	82.7881814	13.3239144	2189.16449
209	1	0	1	86.4458566	20.2158584	2377.93319
216	1	1	0	83.7923105	12.4584224	960.027923
144	1	0	0	89.7284203	17.161048	2395.75284
234	0	0	1	75.3964065	8.29308976	1310.7397
169	0	0	0	74.992515	8.6003633	1637.01495
117	0	0	1	78.42772	3.49165684	1592.84167
188	0	1	1	80.2369001	8.44423955	1412.0665
131	0	1	0	75.5723139	13.2597261	962.920463
126	0	0	1	84.1028601	16.3588954	2108.65301
160	0	0	0	80.4242996	3.85723146	1031.79799
157	1	0	1	88.6122493	13.3814149	2633.50759
191	0	1	1	85.5382783	12.8278183	2009.65834
220	1	1	1	75.2474763	7.47145246	1114.13462
138	1	1	0	104.886102	11.0763199	1358.85372
186	1	0	0	89.9904194	10.1256281	1694.19466
196	1	1	0	68.0449885	4.62946952	658.521923
139	1	0	0	78.7906908	9.85839022	1667.07783
198	1	1	1	83.1906625	9.5910069	1683.18138
143	1	0	1	81.7459107	10.798065	1168.04166
145	1	1	1	72.5553685	6.70844551	1716.78157
190	1	0	0	95.4198932	15.0846838	2489.80236
232	0	1	0	74.0870095	12.6845806	2108.21676
210	0	1	1	105.207984	12.8690619	1597.0695
137	0	1	1	79.7224839	12.6032931	1311.89592
171	0	0	0	78.2490153	14.2611672	1975.33697
219	0	0	0	97.2954323	15.1509736	2404.86342
250	1	0	0	81.3982893	15.3772961	1825.18218
271	1	1	0	82.1028461	9.50660191	1282.86822

	1 MS	2 Running	3 Lesion	4 2. Arena duration (s)	5 2. Inner zone duration (s)	6 2. Inner Zone frequency
227	0	0	1	249	0	0
129	1	1	1	249	0	0
207	0	1	1	249	0	0
164	1	1	0	249	12.499993	7
141	1	0	1	249	25.333323	16
174	0	1	0	249	23.999892	14
148	1	0	0	249	2.333332	1
176	0	0	0	249	12.833227	8
154	1	0	1	249	2.166666	1
122	1	1	0	249	1.499998	3
197	1	0	0	249	5.666666	4
222	0	1	0	249	20.333326	10
193	0	0	1	249	14.166662	7
203	0	1	1	249	11.499995	8
167	0	0	0	249	27.999988	11
182	1	1	1	249	26.166656	6
209	1	0	1	249	18.333326	5
216	1	1	0	249	10.833326	5
144	1	0	0	249	19.333225	11
234	0	0	1	249	10.666661	6
169	0	0	0	249	4.499998	6
117	0	0	1	249	20.833325	8
188	0	1	1	249	3.833332	3
131	0	1	0	249	0	0
126	0	0	1	249	20.333324	9
160	0	0	0	249	0	0
157	1	0	1	249	31.000189	9
191	0	1	1	249	6.333331	6
220	1	1	1	249	0	0
138	1	1	0	249	8.33333	4
186	1	0	0	249	9.666663	3
196	1	1	0	249	3.166666	1
139	1	0	0	249	4.999998	2
198	1	1	1	249	0	0
143	1	0	1	249	0.166667	1
145	1	1	1	249	0	0
190	1	0	0	249	19.166859	8
232	0	1	0	241	21.833324	8
210	0	1	1	241	34.999985	9
137	0	1	1	241	0	0
171	0	0	0	241	9.499996	3
219	0	0	0	241	32.999987	9
250	1	0	0	249	37.166653	8
271	1	1	0	249	5.833331	6

	1 MS	2 Running	3 Lesion	4 2. Inner zone latency (s)	5 2. Outer zone duration (s)	6 2. Outer zone frequency
227	0	0	1	249	249	1
129	1	1	1	249	249	1
207	0	1	1	249	249	1
164	1	1	0	250.333233	236.500007	8
141	1	0	1	256.666564	223.666677	17
174	0	1	0	249	225.000108	14
148	1	0	0	407.499837	246.666668	2
176	0	0	0	249	236.166773	8
154	1	0	1	280.666554	246.833334	2
122	1	1	0	251.499899	247.500002	4
197	1	0	0	251.833232	243.333334	5
222	0	1	0	250.666566	228.666674	11
193	0	0	1	253.166565	234.833338	8
203	0	1	1	308.33321	237.500005	9
167	0	0	0	257.499897	221.000012	12
182	1	1	1	249.833233	222.833344	7
209	1	0	1	298.833213	230.666674	6
216	1	1	0	275.333223	238.166674	6
144	1	0	0	249	229.666775	11
234	0	0	1	267.833226	238.333339	7
169	0	0	0	279.999888	244.500002	7
117	0	0	1	298.833213	228.166675	9
188	0	1	1	254.166565	245.166668	4
131	0	1	0	-	249	1
126	0	0	1	362.499855	228.666676	10
160	0	0	0	-	249	1
157	1	0	1	295.333215	217.999811	9
191	0	1	1	337.333198	242.666669	7
220	1	1	1	-	249	1
138	1	1	0	303.166545	240.66667	5
186	1	0	0	265.16656	239.333337	4
196	1	1	0	320.166538	245.833334	2
139	1	0	0	411.666502	244.000002	3
198	1	1	1	-	249	1
143	1	0	1	273.833223	248.833333	2
145	1	1	1	-	249	1
190	1	0	0	253.333232	229.833141	8
232	0	1	0	298.166547	219.166676	9
210	0	1	1	242.833236	206.000015	10
137	0	1	1	-	241	1
171	0	0	0	276.999889	231.500004	4
219	0	0	0	244.666568	208.000013	10
250	1	0	0	264.166561	211.833347	9
271	1	1	0	412.999834	243.166669	7

	1 MS	2 Running	3 Lesion	4 2. Velocity max (cm/s)	5 2. Velocity mean (cm/s)
227	0	0	1	49.7654743	2.01254726
129	1	1	1	74.7501787	7.26470376
207	0	1	1	63.3046279	2.25651657
164	1	1	0	84.261342	10.1576767
141	1	0	1	88.0887124	12.3335881
174	0	1	0	72.3618823	8.85934481
148	1	0	0	75.4372787	5.41127524
176	0	0	0	124.443038	8.19828651
154	1	0	1	111.631594	7.1428952
122	1	1	0	70.0131484	7.14090937
197	1	0	0	76.5228994	5.84625235
222	0	1	0	87.8239633	8.44693957
193	0	0	1	67.4950291	5.96436266
203	0	1	1	77.9913278	6.82178978
167	0	0	0	93.7607225	10.1682547
182	1	1	1	80.0474469	8.79182903
209	1	0	1	94.3749826	9.54993679
216	1	1	0	76.737836	3.85553552
144	1	0	0	80.1250717	9.6215012
234	0	0	1	72.9711245	5.26401733
169	0	0	0	86.9783686	6.57435982
117	0	0	1	77.1665927	6.39695689
188	0	1	1	73.7124236	5.67095178
131	0	1	0	75.6051456	3.86715205
126	0	0	1	77.3195523	8.46848981
160	0	0	0	75.2471752	4.14376854
157	1	0	1	97.0213741	10.5763402
191	0	1	1	77.8400889	8.07092045
220	1	1	1	81.2387443	4.47443811
138	1	1	0	92.262483	5.45724616
186	1	0	0	84.9843776	6.8039974
196	1	1	0	66.5545294	2.64466738
139	1	0	0	86.3756671	6.69509417
198	1	1	1	88.4515534	6.75976741
143	1	0	1	75.3283184	4.69093247
145	1	1	1	71.0603322	6.89470758
190	1	0	0	88.2085185	9.9992105
232	0	1	0	91.4940532	8.74779074
210	0	1	1	67.6699389	6.62684741
137	0	1	1	70.7383038	5.44355375
171	0	0	0	64.6129359	8.19642257
219	0	0	0	95.7732238	9.97869005
250	1	0	0	60.1031739	7.33005162
271	1	1	0	70.5862021	5.1520837

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Z frequen
305	0	1	0	2295.11026	249	0	0
301	0	1	1	3266.45395	249	0	0
306	1	1	1	3376.55296	249	10.999993	11
309	1	0	1	3504.04369	249	24.99999	13
324	0	1	0	3032.04994	249	34.16665	15
323	0	1	0	3063.65298	249	6.333332	5
322	0	0	1	3909.67806	249	20.166658	11
205	0	0	1	3554.6868	249	0	0
311	0	0	0	3202.05046	249	19.499991	13
315	0	0	0	4319.65122	249	26.833324	13
312	0	1	1	2133.3214	249	1.999999	1
314	0	1	0	1507.87647	249	0.666666	2
313	0	1	0	2183.71543	249	2.166665	1
317	1	1	1	2473.33678	249	0	0
318	1	1	0	3365.05679	249	21.833322	12
319	1	1	0	3874.54858	249	19.333327	21
320	1	1	1	3039.55488	249	4.000001	7

	1 MS	2 Running	3 Lesion	4 1. Velocity max (cm/s)	5 1. Velocity mean (cm/s)	6 2. Distance move
305	0	1	0	82.5855232	9.21731458	1440.69864
301	0	1	1	78.931017	13.1182943	1835.54148
306	1	1	1	92.7684533	13.5604593	2529.60777
309	1	0	1	69.8576003	14.0724698	2234.51717
324	0	1	0	79.6134242	12.1769128	1558.78553
323	0	1	0	80.1196056	12.3038322	1231.43214
322	0	0	1	74.4173942	15.7015246	2295.11484
205	0	0	1	91.2098421	14.2758566	1650.96909
311	0	0	0	60.8407306	12.8596454	2194.03874
315	0	0	0	83.7889673	17.3480035	2508.60587
312	0	1	1	64.7670642	8.56755903	1034.19545
314	0	1	0	66.8814427	6.05573121	1048.17153
313	0	1	0	68.6992661	8.7699451	1790.72313
317	1	1	1	65.1221073	9.93308386	416.550111
318	1	1	0	82.5211894	13.5142896	2033.97342
319	1	1	0	72.771129	15.5604418	2489.64896
320	1	1	1	82.6177864	12.2070532	1775.40025

	1 MS	2 Running	3 Lesion	4 2. Arena duration (s)	5 2. Inner zone duration (s)	6 2. Inner Zone frequency
305	0	1	0	249	0	0
301	0	1	1	249	0	0
306	1	1	1	249	24.166654	15
309	1	0	1	249	29.666655	13
324	0	1	0	249	26.666655	10
323	0	1	0	249	14.499994	4
322	0	0	1	249	13.833329	6
205	0	0	1	249	1.999998	3
311	0	0	0	249	55.666645	14
315	0	0	0	249	42.833315	14
312	0	1	1	249	0.333333	1
314	0	1	0	249	0	0
313	0	1	0	249	0.333334	1
317	1	1	1	249	0	0
318	1	1	0	249	24.166857	9
319	1	1	0	249	32.166655	13
320	1	1	1	249	0	0

	1 MS	2 Running	3 Lesion	4 2. Inner zone latency (s)	5 2. Outer zone duration (s)	6 2. Outer zone frequency
305	0	1	0	-	249	1
301	0	1	1	-	249	1
306	1	1	1	253.666565	224.833346	16
309	1	0	1	364.833187	219.333345	14
324	0	1	0	267.833226	222.333345	11
323	0	1	0	294.999882	234.500006	5
322	0	0	1	308.166543	235.166671	7
205	0	0	1	412.499835	247.000002	4
311	0	0	0	250.999899	193.333355	15
315	0	0	0	256.166564	206.166685	15
312	0	1	1	358.666523	248.666667	2
314	0	1	0	-	249	1
313	0	1	0	415.499833	248.333133	2
317	1	1	1	-	249	1
318	1	1	0	315.999873	224.833143	9
319	1	1	0	272.666557	216.833345	14
320	1	1	1	-	249	1

	1 MS	2 Running	3 Lesion	4 2. Velocity max (cm/s)	5 2. Velocity mean (cm/s)
305	0	1	0	91.3969817	5.78594065
301	0	1	1	77.7129137	7.37165562
306	1	1	1	81.3752537	10.1590713
309	1	0	1	66.4541713	8.97396815
324	0	1	0	65.2697437	6.26018516
323	0	1	0	54.9954107	4.94551258
322	0	0	1	75.3296558	9.21733247
205	0	0	1	75.2952552	6.63040093
311	0	0	0	63.5171104	8.81140459
315	0	0	0	75.9998563	10.0747263
312	0	1	1	63.7772292	4.15339693
314	0	1	0	67.4059009	4.20952598
313	0	1	0	79.3640025	7.20613236
317	1	1	1	14.1766271	1.67289269
318	1	1	0	76.3822182	8.16857162
319	1	1	0	79.4213938	9.99859391
320	1	1	1	73.5994603	7.13012393

A5.1.4.2.2.1.2. Open Field P63 Five Minute Time-bins First Five Minutes Descriptive Statistics

	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total				61	3012.34	915.28	117.190	2777.92	3246.76
MS	0			32	2964.40	948.88	167.740	2622.29	3306.51
MS	1			29	3065.24	890.39	165.342	2726.55	3403.92
Running	0			28	3223.24	1094.91	206.919	2798.68	3647.80
Running	1			33	2833.39	698.08	121.521	2585.86	3080.92
Lesion	0			32	3049.84	957.45	169.254	2704.65	3395.04
Lesion	1			29	2970.96	881.40	163.672	2635.69	3306.22
MS*Running	0	0		15	3082.59	1215.18	313.760	2409.64	3755.54
MS*Running	0	1		17	2860.12	654.01	158.622	2523.86	3196.39
MS*Running	1	0		13	3385.53	959.85	266.215	2805.50	3965.57
MS*Running	1	1		16	2805.00	762.69	190.673	2398.59	3211.41
MS*Lesion	0	0		17	3070.33	1009.15	244.755	2551.47	3589.19
MS*Lesion	0	1		15	2844.35	894.85	231.050	2348.80	3339.91
MS*Lesion	1	0		15	3026.63	930.00	240.125	2511.61	3541.65
MS*Lesion	1	1		14	3106.60	878.97	234.915	2599.10	3614.10
Running*Lesion	0	0		15	3184.05	1116.71	288.334	2565.64	3802.47
Running*Lesion	0	1		13	3268.46	1112.81	308.639	2595.99	3940.92
Running*Lesion	1	0		17	2931.42	808.19	196.014	2515.89	3346.96
Running*Lesion	1	1		16	2729.23	566.08	141.520	2427.59	3030.88
MS*Running*Lesi	0	0	0	8	3237.76	1237.58	437.551	2203.12	4272.41
MS*Running*Lesi	0	0	1	7	2905.25	1260.92	476.583	1739.09	4071.40
MS*Running*Lesi	0	1	0	9	2921.50	802.28	267.428	2304.81	3538.19
MS*Running*Lesi	0	1	1	8	2791.07	481.44	170.217	2388.57	3193.57
MS*Running*Lesi	1	0	0	7	3122.67	1055.77	399.045	2146.24	4099.10
MS*Running*Lesi	1	0	1	6	3692.20	814.85	332.661	2837.07	4547.34
MS*Running*Lesi	1	1	0	8	2942.59	870.10	307.628	2215.17	3670.02
MS*Running*Lesi	1	1	1	8	2667.40	667.93	236.151	2108.99	3225.81

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s) -95.00%	1. Inner zone duration (s) +95.00%
Total				61	11.3524	13.0944	1.67656	7.9988	14.7061
MS	0			32	12.2447	14.5703	2.57569	6.9916	17.4979
MS	1			29	10.3678	11.4223	2.12106	6.0230	14.7126
Running	0			28	11.8333	11.0382	2.08603	7.5531	16.1135
Running	1			33	10.9444	14.7755	2.57208	5.7052	16.1836
Lesion	0			32	14.0833	15.2057	2.68802	8.6010	19.5656
Lesion	1			29	8.3390	9.6698	1.79565	4.6608	12.0173
MS*Running	0	0		15	12.1000	12.5399	3.23778	5.1556	19.0443
MS*Running	0	1		17	12.3725	16.5435	4.01240	3.8666	20.8784
MS*Running	1	0		13	11.5256	9.5131	2.63846	5.7769	17.2743
MS*Running	1	1		16	9.4270	13.0014	3.25035	2.4991	16.3550
MS*Lesion	0	0		17	14.8235	17.1385	4.15671	6.0116	23.6353
MS*Lesion	0	1		15	9.3222	10.8240	2.79476	3.3280	15.3163
MS*Lesion	1	0		15	13.2444	13.2236	3.41432	5.9214	20.5674
MS*Lesion	1	1		14	7.2857	8.5391	2.28217	2.3553	12.2160
Running*Lesion	0	0		15	12.1111	11.8141	3.05040	5.5686	18.6535
Running*Lesion	0	1		13	11.5128	10.5405	2.92343	5.1432	17.8824
Running*Lesion	1	0		17	15.8235	17.8602	4.33174	6.6406	25.0064
Running*Lesion	1	1		16	5.7604	8.3570	2.08926	1.3072	10.2135
MS*Running*Les	0	0	0	8	14.2500	13.4119	4.74184	3.0373	25.4626
MS*Running*Les	0	0	1	7	9.6428	11.9936	4.53315	-1.4493	20.7350
MS*Running*Les	0	1	0	9	15.3333	20.7230	6.90767	-0.5958	31.2624
MS*Running*Les	0	1	1	8	9.0416	10.5276	3.72208	0.2403	17.8429
MS*Running*Les	1	0	0	7	9.6666	10.1361	3.83110	0.2923	19.0410
MS*Running*Les	1	0	1	6	13.6944	9.1338	3.72886	4.1090	23.2798
MS*Running*Les	1	1	0	8	16.3749	15.4163	5.45051	3.4865	29.2634
MS*Running*Les	1	1	1	8	2.4791	3.7706	1.33312	-0.6731	5.6315

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total				61	6.68852	6.40713	0.82034	5.04758	8.3294
MS	0			32	6.59375	6.77690	1.19799	4.15041	9.0370
MS	1			29	6.79310	6.09085	1.13104	4.47626	9.1099
Running	0			28	7.25000	6.13203	1.15884	4.87224	9.6277
Running	1			33	6.21212	6.68841	1.16430	3.84051	8.5837
Lesion	0			32	7.71875	6.60515	1.16763	5.33733	10.1001
Lesion	1			29	5.55172	6.09206	1.13126	3.23442	7.8690
MS*Running	0	0		15	7.00000	6.82432	1.76203	3.22081	10.7791
MS*Running	0	1		17	6.23529	6.92395	1.67930	2.67532	9.7952
MS*Running	1	0		13	7.53846	5.48658	1.52170	4.22295	10.8539
MS*Running	1	1		16	6.18750	6.65551	1.66387	2.64102	9.7339
MS*Lesion	0	0		17	7.23529	6.47620	1.57070	3.90553	10.5650
MS*Lesion	0	1		15	5.86666	7.25914	1.87430	1.84668	9.8866
MS*Lesion	1	0		15	8.26666	6.93301	1.79009	4.42729	12.1060
MS*Lesion	1	1		14	5.21428	4.79067	1.28036	2.44823	7.9803
Running*Lesion	0	0		15	7.00000	6.11788	1.57963	3.61202	10.3879
Running*Lesion	0	1		13	7.53846	6.38507	1.77090	3.67999	11.3969
Running*Lesion	1	0		17	8.35294	7.13215	1.72980	4.68592	12.0199
Running*Lesion	1	1		16	3.93750	5.51928	1.37982	0.99648	6.8785
MS*Running*Lesi	0	0	0	8	7.25000	5.84929	2.06803	2.35986	12.1401
MS*Running*Lesi	0	0	1	7	6.71428	8.28078	3.12984	-0.94416	14.3727
MS*Running*Lesi	0	1	0	9	7.22222	7.34468	2.44822	1.57659	12.8678
MS*Running*Lesi	0	1	1	8	5.12500	6.72813	2.37875	-0.49986	10.7498
MS*Running*Lesi	1	0	0	7	6.71428	6.87299	2.59774	0.35782	13.0707
MS*Running*Lesi	1	0	1	6	8.50000	3.67423	1.50000	4.64412	12.3558
MS*Running*Lesi	1	1	0	8	9.62500	7.15017	2.52796	3.64730	15.6027
MS*Running*Lesi	1	1	1	8	2.75000	4.09703	1.44852	-0.67520	6.1752

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total				61	81.3579	9.5662	1.22483	78.9078	83.8079
MS	0			32	80.7446	10.1651	1.79695	77.0797	84.4095
MS	1			29	82.0346	8.9886	1.66914	78.6155	85.4537
Running	0			28	82.3585	8.7394	1.65160	78.9697	85.7473
Running	1			33	80.5088	10.2724	1.78820	76.8664	84.1513
Lesion	0			32	81.7973	10.3807	1.83506	78.0547	85.5400
Lesion	1			29	80.8730	8.7367	1.62237	77.5497	84.1962
MS*Running	0	0		15	81.3979	9.7863	2.52683	75.9784	86.8174
MS*Running	0	1		17	80.1681	10.7538	2.60820	74.6390	85.6973
MS*Running	1	0		13	83.4669	7.5915	2.10550	78.8794	88.0544
MS*Running	1	1		16	80.8708	10.0742	2.51855	75.5027	86.2390
MS*Lesion	0	0		17	79.5525	10.7840	2.61550	74.0079	85.0972
MS*Lesion	0	1		15	82.0956	9.6026	2.47940	76.7778	87.4134
MS*Lesion	1	0		15	84.3414	9.6253	2.48525	79.0110	89.6717
MS*Lesion	1	1		14	79.5630	7.8439	2.09637	75.0341	84.0920
Running*Lesion	0	0		15	83.1022	10.1762	2.62748	77.4668	88.7376
Running*Lesion	0	1		13	81.5004	7.0389	1.95226	77.2468	85.7540
Running*Lesion	1	0		17	80.6459	10.7316	2.60280	75.1283	86.1636
Running*Lesion	1	1		16	80.3632	10.1107	2.52769	74.9755	85.7508
MS*Running*Lesi	0	0	0	8	80.8372	12.0959	4.27656	70.7247	90.9497
MS*Running*Lesi	0	0	1	7	82.0387	7.2024	2.72226	75.3775	88.6998
MS*Running*Lesi	0	1	0	9	78.4106	10.0721	3.35739	70.6684	86.1528
MS*Running*Lesi	0	1	1	8	82.1453	11.8301	4.18259	72.2551	92.0356
MS*Running*Lesi	1	0	0	7	85.6908	7.5015	2.83532	78.7530	92.6286
MS*Running*Lesi	1	0	1	6	80.8724	7.4689	3.04918	73.0342	88.7106
MS*Running*Lesi	1	1	0	8	83.1607	11.5605	4.08728	73.4958	92.8256
MS*Running*Lesi	1	1	1	8	78.5810	8.4762	2.99679	71.4947	85.6673

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total				61	12.1333	3.68820	0.47222	11.1887	13.0779
MS	0			32	11.9730	3.83702	0.67829	10.5897	13.3564
MS	1			29	12.3102	3.57589	0.66402	10.9500	13.6704
Running	0			28	12.9785	4.40933	0.83328	11.2687	14.6882
Running	1			33	11.4162	2.81879	0.49068	10.4167	12.4157
Lesion	0			32	12.2906	3.86340	0.68296	10.8977	13.6835
Lesion	1			29	11.9597	3.54462	0.65821	10.6114	13.3080
MS*Running	0	0		15	12.4428	4.90884	1.26745	9.7244	15.1613
MS*Running	0	1		17	11.5585	2.65539	0.64402	10.1932	12.9238
MS*Running	1	0		13	13.5965	3.85483	1.06914	11.2670	15.9259
MS*Running	1	1		16	11.2650	3.06302	0.76575	9.6328	12.8972
MS*Lesion	0	0		17	12.4102	4.08417	0.99055	10.3103	14.5101
MS*Lesion	0	1		15	11.4776	3.61136	0.93245	9.4777	13.4776
MS*Lesion	1	0		15	12.1551	3.73494	0.96435	10.0868	14.2235
MS*Lesion	1	1		14	12.4763	3.53000	0.94343	10.4381	14.5144
Running*Lesion	0	0		15	12.8503	4.50977	1.16441	10.3529	15.3478
Running*Lesion	0	1		13	13.1263	4.46913	1.23951	10.4256	15.8270
Running*Lesion	1	0		17	11.7967	3.25120	0.78853	10.1251	13.4684
Running*Lesion	1	1		16	11.0119	2.31023	0.57755	9.7809	12.2429
MS*Running*Les	0	0	0	8	13.1212	5.00865	1.77082	8.9338	17.3085
MS*Running*Les	0	0	1	7	11.6676	5.06394	1.91399	6.9843	16.3510
MS*Running*Les	0	1	0	9	11.7782	3.23347	1.07782	9.2927	14.2636
MS*Running*Les	0	1	1	8	11.3114	2.00899	0.71028	9.6318	12.9910
MS*Running*Les	1	0	0	7	12.5408	4.24006	1.60259	8.6194	16.4622
MS*Running*Les	1	0	1	6	14.8281	3.27249	1.33599	11.3938	18.2624
MS*Running*Les	1	1	0	8	11.8176	3.49439	1.23545	8.8962	14.7390
MS*Running*Les	1	1	1	8	10.7124	2.68247	0.94840	8.4698	12.9550

A5.1.4.2.2.1.3. Open Field P63 Five Minute Time-bins First Five Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	55434514	1	55434514	646.245	0.00000
MS	30473	1	30473	0.3553	0.55368
Running	251462	1	251462	2.9315	0.09271
Lesion	2673	1	2673	0.0312	0.86055
MS*Running	56395	1	56395	0.6575	0.42108
MS*Lesion	53923	1	53923	0.6286	0.43139
Running*Lesion	38832	1	38832	0.4527	0.50397
MS*Running*Lesion	103042	1	103042	1.2012	0.27802
Error	4546305	53	85779		

A5.1.4.2.2.1.4. Open Field P63 Five Minute Time-bins First Five Minutes Inner Zone Duration ANOVA

Effect	Univariate Tests of Significance for 1. Inner zone duration (s) (P63 Open fi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	7698.41	1	7698.41	44.6877	0.00000
MS	34.447	1	34.447	0.1999	0.65657
Running	15.232	1	15.232	0.0884	0.76735
Lesion	405.517	1	405.517	2.3539	0.13091
MS*Running	23.405	1	23.405	0.1358	0.71389
MS*Lesion	0.999	1	0.999	0.0058	0.93958
Running*Lesion	361.524	1	361.524	2.0985	0.15332
MS*Running*Lesion	247.964	1	247.964	1.4393	0.23557
Error	9130.374	53	172.27		

A5.1.4.2.2.1.5. Open Field P63 Five Minute Time-bins First Five Minutes Inner Zone Frequency ANOVA

Effect	Univariate Tests of Significance for 1. Inner Zone frequency (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2731.84	1	2731.84	65.0537	0.00000
MS	1.535	1	1.535	0.0365	0.84909
Running	18.673	1	18.673	0.4446	0.50776
Lesion	56.073	1	56.073	1.3352	0.25305
MS*Running	1.405	1	1.405	0.0334	0.85558
MS*Lesion	5.673	1	5.673	0.1351	0.71466
Running*Lesion	98.255	1	98.255	2.3397	0.13205
MS*Running*Lesion	47.390	1	47.390	1.1285	0.29291
Error	2225.66	53	41.994		

A5.1.4.2.2.1.6. Open Field P63 Five Minute Time-bins First Five Minutes Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity max (cm/s) (P63 Open field Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	399402.	1	399402.	4085.19	0.00000
MS	22.3	1	22.3	0.228	0.63469
Running	48.0	1	48.0	0.490	0.48676
Lesion	18.7	1	18.7	0.191	0.66347
MS*Running	5.9	1	5.9	0.060	0.80714
MS*Lesion	193.2	1	193.2	1.976	0.16563
Running*Lesion	7.2	1	7.2	0.074	0.78680
MS*Running*Lesion	5.0	1	5.0	0.051	0.82282
Error	5181.7	53	97.8		

A5.1.4.2.2.1.7. Open Field P63 Five Minute Time-bins First Five Minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity mean (cm/s) (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	8989.70	1	8989.70	645.057	0.00000
MS	3.839	1	3.839	0.275	0.60187
Running	40.195	1	40.195	2.884	0.09531
Lesion	0.512	1	0.512	0.036	0.84866
MS*Running	9.269	1	9.269	0.665	0.41841
MS*Lesion	9.050	1	9.050	0.649	0.42393
Running*Lesion	5.442	1	5.442	0.390	0.53472
MS*Running*Lesion	18.033	1	18.033	1.294	0.26043
Error	738.62	53	13.936		

A5.1.4.2.2.2.1. Open Field P63 Five Minute Time-bins Second Five Minutes Descriptive Statistics

	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total				61	1731.87	580.015	74.263	1583.32	1880.42
MS	0			32	1661.89	533.359	94.285	1469.59	1854.19
MS	1			29	1809.09	627.830	116.585	1570.28	2047.90
Running	0			28	1907.43	570.546	107.823	1686.20	2128.67
Running	1			33	1582.91	553.416	96.337	1386.68	1779.14
Lesion	0			32	1773.17	541.408	95.708	1577.97	1968.37
Lesion	1			29	1686.30	626.311	116.303	1448.07	1924.54
MS*Running	0	0		15	1817.96	578.847	149.457	1497.41	2138.52
MS*Running	0	1		17	1524.18	463.677	112.458	1285.78	1762.58
MS*Running	1	0		13	2010.67	565.656	156.884	1668.85	2352.49
MS*Running	1	1		16	1645.31	644.967	161.241	1301.63	1988.98
MS*Lesion	0	0		17	1810.30	523.879	127.059	1540.94	2079.65
MS*Lesion	0	1		15	1493.69	509.107	131.450	1211.76	1775.63
MS*Lesion	1	0		15	1731.09	576.046	148.734	1412.08	2050.09
MS*Lesion	1	1		14	1892.66	690.714	184.601	1493.86	2291.47
Running*Lesion	0	0		15	1946.67	472.497	121.998	1685.01	2208.33
Running*Lesion	0	1		13	1862.17	683.974	189.700	1448.84	2275.49
Running*Lesion	1	0		17	1620.08	565.206	137.082	1329.48	1910.68
Running*Lesion	1	1		16	1543.41	556.228	139.057	1247.02	1839.80
MS*Running*Les	0	0	0	8	2040.61	507.297	179.356	1616.50	2464.72
MS*Running*Les	0	0	1	7	1563.51	583.043	220.369	1024.28	2102.73
MS*Running*Les	0	1	0	9	1605.57	472.782	157.594	1242.16	1968.99
MS*Running*Les	0	1	1	8	1432.61	466.761	165.025	1042.39	1822.83
MS*Running*Les	1	0	0	7	1839.30	442.116	167.104	1430.41	2248.19
MS*Running*Les	1	0	1	6	2210.60	666.541	272.114	1511.11	2910.09
MS*Running*Les	1	1	0	8	1636.40	688.592	243.454	1060.72	2212.08
MS*Running*Les	1	1	1	8	1654.21	645.794	228.322	1114.31	2194.11

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total				61	12.8961	13.2116	1.69157	9.5125	16.2798
MS	0			32	13.5260	14.3507	2.53686	8.3520	18.7000
MS	1			29	12.2011	12.0443	2.23658	7.6197	16.7825
Running	0			28	16.8988	14.3310	2.70831	11.3418	22.4558
Running	1			33	9.5000	11.3169	1.97002	5.4871	13.5128
Lesion	0			32	15.3385	14.1731	2.50547	10.2285	20.4484
Lesion	1			29	10.2011	11.7170	2.17579	5.7442	14.6580
MS*Running	0	0		15	17.8777	16.1350	4.16604	8.9424	26.8130
MS*Running	0	1		17	9.6862	11.7387	2.84706	3.6507	15.7217
MS*Running	1	0		13	15.7692	12.4817	3.46182	8.2265	23.3119
MS*Running	1	1		16	9.3020	11.2319	2.80798	3.3170	15.2871
MS*Lesion	0	0		17	17.2941	16.5544	4.01504	8.7825	25.8056
MS*Lesion	0	1		15	9.2555	10.2973	2.65876	3.5530	14.9580
MS*Lesion	1	0		15	13.1222	11.0314	2.84830	7.0132	19.2312
MS*Lesion	1	1		14	11.2143	13.3929	3.57940	3.4814	18.9471
Running*Lesion	0	0		15	18.9777	16.8137	4.34128	9.6666	28.2889
Running*Lesion	0	1		13	14.5000	10.9840	3.04641	7.8624	21.1375
Running*Lesion	1	0		17	12.1274	10.8841	2.63978	6.5313	17.7235
Running*Lesion	1	1		16	6.7083	11.4334	2.85836	0.6158	12.8007
MS*Running*Les	0	0	0	8	23.2916	19.7905	6.99700	6.7463	39.8369
MS*Running*Les	0	0	1	7	11.6904	8.1714	3.08851	4.1331	19.2477
MS*Running*Les	0	1	0	9	11.9629	11.7238	3.90796	2.9511	20.9747
MS*Running*Les	0	1	1	8	7.1250	11.9883	4.23851	-2.8975	17.1474
MS*Running*Les	1	0	0	7	14.0476	12.2280	4.62176	2.7385	25.3566
MS*Running*Les	1	0	1	6	17.7778	13.6193	5.56006	3.4852	32.0704
MS*Running*Les	1	1	0	8	12.3125	10.6590	3.76854	3.4013	21.2237
MS*Running*Les	1	1	1	8	6.2916	11.6621	4.12319	-3.4581	16.0414

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total				61	5.39344	4.70913	0.60294	4.1873	6.5995
MS	0			32	5.56250	4.59970	0.81312	3.9041	7.2208
MS	1			29	5.20689	4.90174	0.91023	3.3423	7.0714
Running	0			28	6.64285	4.53148	0.85637	4.8857	8.3999
Running	1			33	4.33333	4.66145	0.81145	2.6804	5.9862
Lesion	0			32	6.15625	4.51598	0.79832	4.5280	7.7844
Lesion	1			29	4.55172	4.85199	0.90099	2.7061	6.3973
MS*Running	0	0		15	6.93333	4.28396	1.10611	4.5609	9.3057
MS*Running	0	1		17	4.35294	4.64947	1.12766	1.9624	6.7434
MS*Running	1	0		13	6.30769	4.95621	1.37460	3.3126	9.3027
MS*Running	1	1		16	4.31250	4.82657	1.20664	1.7406	6.8844
MS*Lesion	0	0		17	6.58823	5.25664	1.27492	3.8855	9.2909
MS*Lesion	0	1		15	4.40000	3.54159	0.91443	2.4387	6.3612
MS*Lesion	1	0		15	5.66666	3.61873	0.93435	3.6626	7.6706
MS*Lesion	1	1		14	4.71428	6.09449	1.62882	1.1954	8.2331
Running*Lesion	0	0		15	6.80000	4.53872	1.17189	4.2865	9.3134
Running*Lesion	0	1		13	6.46153	4.70133	1.30391	3.6205	9.3025
Running*Lesion	1	0		17	5.58823	4.55602	1.10499	3.2457	7.9307
Running*Lesion	1	1		16	3.00000	4.53137	1.13284	0.5854	5.4146
MS*Running*Les	0	0	0	8	8.12500	4.99821	1.76713	3.9463	12.3036
MS*Running*Les	0	0	1	7	5.57142	3.10145	1.17224	2.7030	8.4398
MS*Running*Les	0	1	0	9	5.22222	5.38000	1.79333	1.0867	9.3576
MS*Running*Les	0	1	1	8	3.37500	3.77728	1.33547	0.2171	6.5328
MS*Running*Les	1	0	0	7	5.28571	3.72890	1.40939	1.8370	8.7343
MS*Running*Les	1	0	1	6	7.50000	6.25299	2.55277	0.9378	14.0621
MS*Running*Les	1	1	0	8	6.00000	3.74165	1.32287	2.8719	9.1281
MS*Running*Les	1	1	1	8	2.62500	5.42316	1.91737	-1.9088	7.1588

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total				61	77.0444	14.9095	1.90897	73.2259	80.863
MS	0			32	76.0668	13.8289	2.44462	71.0809	81.052
MS	1			29	78.1232	16.1962	3.00757	71.9625	84.284
Running	0			28	80.7261	15.5190	2.93282	74.7084	86.743
Running	1			33	73.9206	13.8444	2.41001	69.0116	78.829
Lesion	0			32	79.1883	13.3362	2.35753	74.3800	83.996
Lesion	1			29	74.6789	16.3825	3.04215	68.4473	80.910
MS*Running	0	0		15	78.3783	17.2143	4.44473	68.8453	87.911
MS*Running	0	1		17	74.0272	10.0897	2.44711	68.8396	79.215
MS*Running	1	0		13	83.4350	13.4658	3.73475	75.2977	91.572
MS*Running	1	1		16	73.8074	17.3285	4.33213	64.5736	83.041
MS*Lesion	0	0		17	80.3558	16.6001	4.02611	71.8208	88.890
MS*Lesion	0	1		15	71.2059	7.8021	2.01450	66.8852	75.526
MS*Lesion	1	0		15	77.8650	8.6810	2.24143	73.0576	82.672
MS*Lesion	1	1		14	78.3999	21.9927	5.87780	65.7016	91.098
Running*Lesion	0	0		15	82.1392	15.8161	4.08370	73.3806	90.898
Running*Lesion	0	1		13	79.0955	15.6420	4.33833	69.6431	88.547
Running*Lesion	1	0		17	76.5844	10.5045	2.54771	71.1835	81.985
Running*Lesion	1	1		16	71.0904	16.5712	4.14282	62.2601	79.920
MS*Running*Les	0	0	0	8	85.0415	20.0204	7.07830	68.3040	101.779
MS*Running*Les	0	0	1	7	70.7632	9.8475	3.72201	61.6558	79.870
MS*Running*Les	0	1	0	9	76.1907	12.6070	4.20236	66.5001	85.881
MS*Running*Les	0	1	1	8	71.5933	6.1854	2.18687	66.4222	76.764
MS*Running*Les	1	0	0	7	78.8224	9.5914	3.62522	69.9518	87.693
MS*Running*Les	1	0	1	6	88.8165	16.1324	6.58604	71.8865	105.746
MS*Running*Les	1	1	0	8	77.0273	8.3754	2.96117	70.0253	84.029
MS*Running*Les	1	1	1	8	70.5874	23.4437	8.28860	50.9880	90.186

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total				61	6.97609	2.33860	0.29942	6.37715	7.5750
MS	0			32	6.71388	2.16651	0.38298	5.93277	7.4949
MS	1			29	7.26544	2.52140	0.46821	6.30635	8.2245
Running	0			28	7.68125	2.30412	0.43543	6.78780	8.5747
Running	1			33	6.37778	2.22953	0.38811	5.58722	7.1683
Lesion	0			32	7.14865	2.19676	0.38833	6.35664	7.9406
Lesion	1			29	6.78568	2.51098	0.46627	5.83055	7.7408
MS*Running	0	0		15	7.34000	2.35512	0.60808	6.03578	8.6442
MS*Running	0	1		17	6.16142	1.88390	0.45691	5.19280	7.1300
MS*Running	1	0		13	8.07500	2.27171	0.63006	6.70222	9.4477
MS*Running	1	1		16	6.60767	2.59023	0.64755	5.22744	7.9879
MS*Lesion	0	0		17	7.32202	2.14448	0.52011	6.21943	8.4246
MS*Lesion	0	1		15	6.02464	2.04438	0.52785	4.89250	7.1567
MS*Lesion	1	0		15	6.95217	2.31344	0.59732	5.67103	8.2333
MS*Lesion	1	1		14	7.60108	2.77395	0.74137	5.99945	9.2027
Running*Lesion	0	0		15	7.85688	1.92356	0.49666	6.79165	8.9221
Running*Lesion	0	1		13	7.47859	2.74688	0.76185	5.81867	9.1385
Running*Lesion	1	0		17	6.52375	2.28630	0.55451	5.34824	7.6992
Running*Lesion	1	1		16	6.22269	2.23135	0.55783	5.03369	7.4117
MS*Running*Les	0	0	0	8	8.26823	2.06966	0.73173	6.53795	9.9985
MS*Running*Les	0	0	1	7	6.27915	2.34154	0.88501	4.11359	8.4447
MS*Running*Les	0	1	0	9	6.48094	1.93865	0.64621	4.99076	7.9711
MS*Running*Les	0	1	1	8	5.80195	1.88096	0.66502	4.22942	7.3744
MS*Running*Les	1	0	0	7	7.38676	1.77557	0.67110	5.74464	9.0289
MS*Running*Les	1	0	1	6	8.87794	2.67687	1.09282	6.06873	11.6871
MS*Running*Les	1	1	0	8	6.57191	2.76543	0.97772	4.25995	8.8838
MS*Running*Les	1	1	1	8	6.64344	2.59355	0.91696	4.47517	8.8117

A5.1.4.2.2.2.2. Open Field P63 Five Minute Time-bins Second Five minutes Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 2. Distance moved (cm) (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	18384733	1	18384733	580.443	0.00000
MS	45839	1	45839	1.447	0.23431
Running	165136	1	165136	5.213	0.02644
Lesion	6403	1	6403	0.202	0.65481
MS*Running	3515	1	3515	0.111	0.74033
MS*Lesion	101542	1	101542	3.205	0.07908
Running*Lesion	229	1	229	0.007	0.93256
MS*Running*Lesion	40666	1	40666	1.283	0.26227
Error	1678699	53	31673		

A5.1.4.2.2.2.3. Open Field P63 Five Minute Time-bins Second Five minutes Distance Travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Distance moved (cm) (P63 Open field 5 min timebins s
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 3167E2, df = 53.000

Cell No.	Running	{1} 1907.4	{2} 1582.9
1	0		0.02911
2	1	0.02911	

A5.1.4.2.2.2.4. Open Field P63 Five Minute Time-bins Second Five minutes Inner Zone Duration ANOVA

Univariate Tests of Significance for 2. Inner zone duration (s) (P63 Open fi
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	10268.2	1	10268.2	61.7035	0.00000
MS	12.46	1	12.46	0.0748	0.78541
Running	797.10	1	797.10	4.7899	0.03305
Lesion	329.86	1	329.86	1.9822	0.16499
MS*Running	6.72	1	6.72	0.0403	0.84152
MS*Lesion	188.23	1	188.23	1.1310	0.29236
Running*Lesion	8.39	1	8.39	0.0504	0.82316
MS*Running*Lesion	256.44	1	256.44	1.5409	0.21993
Error	8819.85	53	166.41		

A5.1.4.2.2.2.5. Open Field P63 Five Minute Time-bins Second Five minutes Inner zone duration post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Inner zone duration (s) (P63 Open field 5 min timebins
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 166.41, df = 53.000

Cell No.	Running	{1} 16.899	{2} 9.5000
1	0		0.02994
2	1	0.02994	

A5.1.4.2.2.2.6. Open Field P63 Five Minute Time-bins Second Five minutes Inner zone frequency ANOVA

	Univariate Tests of Significance for 2. Inner Zone frequency (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1796.03	1	1796.03	83.0031	0.00000
MS	0.733	1	0.733	0.0338	0.85467
Running	80.627	1	80.627	3.7261	0.05892
Lesion	29.084	1	29.084	1.3441	0.25151
MS*Running	0.828	1	0.828	0.0382	0.84564
MS*Lesion	9.871	1	9.871	0.4562	0.50234
Running*Lesion	22.420	1	22.420	1.0361	0.31335
MS*Running*Lesion	37.269	1	37.269	1.7223	0.19504
Error	1146.82	53	21.638		

A5.1.4.2.2.2.7. Open Field P63 Five Minute Time-bins Second Five Minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for 2. Velocity max (cm/s) (P63 Open field Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	360102.	1	360102.	1716.55	0.00000
MS	127.9	1	127.9	0.610	0.43830
Running	739.6	1	739.6	3.525	0.06594
Lesion	220.7	1	220.7	1.052	0.30965
MS*Running	135.5	1	135.5	0.646	0.42520
MS*Lesion	473.1	1	473.1	2.255	0.13911
Running*Lesion	42.9	1	42.9	0.204	0.65302
MS*Running*Lesion	641.3	1	641.3	3.057	0.08618
Error	11118.4	53	209.8		

A5.1.4.2.2.2.8. Open Field P63 Five Minute Time-bins Second Five Minutes Mean Velocity ANOVA

	Univariate Tests of Significance for 2. Velocity mean (cm/s) (P63 Open fie Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2981.55	1	2981.55	578.671	0.00000
MS	6.602	1	6.602	1.281	0.26274
Running	26.551	1	26.551	5.153	0.02729
Lesion	1.149	1	1.149	0.223	0.63871
MS*Running	0.579	1	0.579	0.112	0.73872
MS*Lesion	16.831	1	16.831	3.266	0.07638
Running*Lesion	0.011	1	0.011	0.002	0.96284
MS*Running*Lesion	7.007	1	7.007	1.359	0.24878
Error	273.078	53	5.152		

A5.1.4.2.2.9. Open Field P63 Five Minute Time-bins Second Five Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Velocity mean (cm/s) (P63 Open field 5 min timebins sprea
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 5.1524, df = 53.000

Cell No.	Running	{1} 7.6813	{2} 6.3778
1	0		0.02975
2	1	0.02975	

A5.1.4.2.2.3.1. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Distance Travelled repeated measures ANOVA

Repeated Measures Analysis of Variance (P63 Open field 5 min timebins spread
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	68833733(	1	68833733(	743.630	0.00000(
MS	755321	1	755321	0.816(	0.37044
Running	4120777	1	4120777	4.451	0.03960
Lesion	86753	1	86753	0.093	0.76069
MS*Running	440363	1	440363	0.475	0.49336
MS*Lesion	151729(	1	151729(	1.639	0.20601
Running*Lesion	225128	1	225128	0.243	0.62393
MS*Running*Lesion	136587(	1	136587(	1.475	0.22985(
Error	4905913	53	92564		
TIME	4985514	1	4985514	200.313	0.00000(
TIME*MS	7815	1	7815	0.031	0.86002
TIME*Running	45211	1	45211	0.181	0.67168(
TIME*Lesion	4010	1	4010	0.016	0.89947
TIME*MS*Running	15875(	1	15875(	0.637	0.42805
TIME*MS*Lesion	37363	1	37363	0.150	0.69996
TIME*Running*Lesion	16548	1	16548	0.664	0.41847
TIME*MS*Running*Lesion	71214	1	71214	0.286	0.59494
Error	1319091	53	24888		

A5.1.4.2.2.3.2. Open Field P63 Five Minute Time-bins 1st and 2nd Intervals Distance Travelled repeated measures post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 2489E2, df = 53.000

Cell No.	TIME	{1} 3012.3	{2} 1731.9
1	1. Distance moved (cm		0.00011
2	2. Distance moved (cm	0.00011	

A5.1.4.2.2.3.3. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Inner Zone duration repeated measures ANOVA

	Repeated Measures Analysis of Variance (P63 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	17874.27	1	17874.27	70.77351	0.00000(
MS	44.17	1	44.17	0.1749(	0.67748(
Running	516.35	1	516.35	2.04451	0.15862[
Lesion	733.43	1	733.43	2.90402	0.09421(
MS*Running	2.52	1	2.52	0.0099[	0.92077[
MS*Lesion	108.33	1	108.33	0.4289[	0.51535[
Running*Lesion	240.05	1	240.05	0.9504[	0.33402[
MS*Running*Lesion	504.37	1	504.37	1.9970[	0.16345[
Error	13385.47	53	252.56		
TIME	92.37	1	92.37	1.0724[	0.30509(
TIME*MS	2.74	1	2.74	0.0317(	0.85923[
TIME*Running	295.98	1	295.98	3.4365(	0.06934(
TIME*Lesion	1.95	1	1.95	0.0226[	0.88093(
TIME*MS*Running	27.60	1	27.60	0.3204(	0.57371[
TIME*MS*Lesion	80.90	1	80.90	0.9393[	0.33685[
TIME*Running*Lesion	129.87	1	129.87	1.5079(	0.22488(
TIME*MS*Running*Lesion	0.04	1	0.04	0.0004[	0.98385[
Error	4564.76	53	86.13		

A5.1.4.2.2.3.4. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Inner zone frequency Repeated measures ANOVA

	Repeated Measures Analysis of Variance (P63 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4479.002	1	4479.002	85.52525	0.00000(
MS	0.073	1	0.073	0.0014(	0.97029[
Running	88.452	1	88.452	1.68897	0.19936[
Lesion	82.961	1	82.961	1.58412	0.21368[
MS*Running	0.038	1	0.038	0.0007[	0.97865[
MS*Lesion	0.289	1	0.289	0.0055[	0.94108[
Running*Lesion	107.272	1	107.272	2.0483[	0.15824[
MS*Running*Lesion	84.355	1	84.355	1.6107[	0.20993[
Error	2775.638	53	52.371		
TIME	48.880	1	48.880	4.3405[	0.04205[
TIME*MS	2.195	1	2.195	0.1949[	0.66065[
TIME*Running	10.848	1	10.848	0.9633[	0.33080[
TIME*Lesion	2.195	1	2.195	0.1949[	0.66065[
TIME*MS*Running	2.195	1	2.195	0.1949[	0.66065[
TIME*MS*Lesion	15.256	1	15.256	1.3547[	0.24966(
TIME*Running*Lesion	13.403	1	13.403	1.1901[	0.28022[
TIME*MS*Running*Lesion	0.304	1	0.304	0.0269(	0.87020(
Error	596.848	53	11.261		

A5.1.4.2.2.3.5. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Inner zone frequency repeated measures post hoc Newman Keuls test (TIME effect)

	Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 11.261, df = 53.000		
Cell No.	TIME	{1} 6.6885	{2} 5.3934
1	1. Inner Zone frequency		0.037809
2	2. Inner Zone frequenc	0.037809	

A5.1.4.2.2.3.6. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Maximum Velocity repeated measures ANOVA

	Repeated Measures Analysis of Variance (P63 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	758996.2	1	758996.2	3716.963	0.000000
MS	128.6	1	128.6	0.630	0.430998
Running	582.1	1	582.1	2.851	0.097219
Lesion	184.0	1	184.0	0.901	0.346788
MS*Running	98.9	1	98.9	0.484	0.489467
MS*Lesion	30.8	1	30.8	0.151	0.699234
Running*Lesion	7.5	1	7.5	0.036	0.849228
MS*Running*Lesion	379.5	1	379.5	1.858	0.178587
Error	10822.5	53	204.2		
TIME	508.7	1	508.7	4.922	0.030820
TIME*MS	21.7	1	21.7	0.210	0.648765
TIME*Running	205.4	1	205.4	1.988	0.164425
TIME*Lesion	55.4	1	55.4	0.536	0.467120
TIME*MS*Running	42.4	1	42.4	0.411	0.524372
TIME*MS*Lesion	635.5	1	635.5	6.148	0.016366
TIME*Running*Lesion	42.7	1	42.7	0.413	0.523364
TIME*MS*Running*Lesion	266.8	1	266.8	2.581	0.114085
Error	5477.7	53	103.4		

A5.1.4.2.2.3.7. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Maximum Velocity repeated measures post hoc Newman Keuls test (TIME effect)

	Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 103.35, df = 53.000		
Cell No.	TIME	{1} 81.358	{2} 77.044
1	1. Velocity max (cm/s		0.023010
2	2. Velocity max (cm/s	0.023010	

A5.1.4.2.2.3.8. Open Field P63 Five Minute Time-bins 1st and 2nd intervals Maximum velocity repeated measures post hoc Newman Keuls test (TIME*MS*Lesion)

Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 153.78, df = 95.709

Cell No.	MS	Lesion	TIME	{1} 79.553	{2} 80.356	{3} 82.096	{4} 71.206
1	0	0	1. Velocity max (cm/s		0.97431	0.94230	0.25497
2	0	0	2. Velocity max (cm/s	0.97431		0.70015	0.33210
3	0	1	1. Velocity max (cm/s	0.94230	0.70015		0.06630
4	0	1	2. Velocity max (cm/s	0.25497	0.33210	0.06630	
5	1	0	1. Velocity max (cm/s	0.82457	0.65091	0.61912	0.08037
6	1	0	2. Velocity max (cm/s	0.92561	0.98134	0.93517	0.14247
7	1	1	1. Velocity max (cm/s	0.99823	0.86068	0.84033	0.34804
8	1	1	2. Velocity max (cm/s	0.79857	0.97244	0.92363	0.25153

Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 153.78, df = 95.709

Cell No.	MS	Lesion	TIME	{5} 84.341	{6} 77.865	{7} 79.563	{8} 78.400
1	0	0	1. Velocity max (cm/s	0.82457	0.92561	0.99823	0.79857
2	0	0	2. Velocity max (cm/s	0.65091	0.98134	0.86068	0.97244
3	0	1	1. Velocity max (cm/s	0.61912	0.93517	0.84033	0.92363
4	0	1	2. Velocity max (cm/s	0.08037	0.14247	0.34804	0.25153
5	1	0	1. Velocity max (cm/s		0.58348	0.71377	0.77345
6	1	0	2. Velocity max (cm/s	0.58348		0.98168	0.90577
7	1	1	1. Velocity max (cm/s	0.71377	0.98168		0.94686
8	1	1	2. Velocity max (cm/s	0.77345	0.90577	0.94686	

A5.1.4.2.2.3.9. Open Field P63 Five Minute Intervals 1st and 2nd Intervals Mean Velocity Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (P63 Open field 5 min timebins spread Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	11162.82	1	11162.82	741.0956	0.000000
MS	10.25	1	10.25	0.6808	0.413001
Running	66.04	1	66.04	4.3845	0.041067
Lesion	1.60	1	1.60	0.1061	0.745924
MS*Running	7.24	1	7.24	0.4807	0.491113
MS*Lesion	25.28	1	25.28	1.6785	0.200740
Running*Lesion	2.97	1	2.97	0.1975	0.658576
MS*Running*Lesion	23.76	1	23.76	1.5774	0.214639
Error	798.32	53	15.06		
TIME	808.44	1	808.44	200.7992	0.000000
TIME*MS	0.19	1	0.19	0.0462	0.830589
TIME*Running	0.70	1	0.70	0.1750	0.677377
TIME*Lesion	0.06	1	0.06	0.0157	0.900635
TIME*MS*Running	2.61	1	2.61	0.6475	0.424591
TIME*MS*Lesion	0.60	1	0.60	0.1487	0.701335
TIME*Running*Lesion	2.48	1	2.48	0.6157	0.436148
TIME*MS*Running*Lesion	1.28	1	1.28	0.3177	0.575347
Error	213.38	53	4.03		

A5.1.4.2.2.3.10. Open Field P63 Five Minute Intervals 1st and 2nd Intervals Mean Velocity Repeated Measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 4.0261, df = 53.000 TIME	{1} 12.133	{2} 6.9761
1	1. Velocity mean (cm/s		0.000113
2	2. Velocity mean (cm/s	0.000113	

A5.1.4.2.3.1.1. P63 Open Field 1 minute time-bins Data spreadsheet

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Zone frequency	8 1. Velocity max (cm/s)	9 1. Velocity mean (cm/s)
227	0	0	1	580.582	50	0	0	59.7591	11.6116
129	1	1	1	924.065	50	0	0	74.3582	18.4813
207	0	1	1	340.601	50	0	0	65.944	6.81203
164	1	1	0	828.58	50	0	0	76.3171	16.5717
141	1	0	1	1204.60	50	0	0	80.304	24.0921
174	0	1	0	825.815	50	0	0	63.0079	16.5163
148	1	0	0	828.22	50	0	0	74.5554	16.5644
176	0	0	0	933.404	50	0	0	74.1687	18.668
154	1	0	1	854.640	50	0.33333	1	73.0238	17.0928
122	1	1	0	1069.85	50	3.16666	4	93.1148	21.3970
197	1	0	0	1254.73	50	2.33333	2	89.9525	25.0947
222	0	1	0	1173.03	50	3.33333	3	101.490	23.4607
193	0	0	1	1119.4	50	6.33333	6	91.9003	22.3888
203	0	1	1	799.613	50	0	0	88.9047	15.9922
167	0	0	0	1127.62	50	0	0	83.0908	22.5525
182	1	1	1	1056.69	50	1.5	1	82.3212	21.1338
209	1	0	1	1261.92	50	0.5	1	78.8439	25.2384
216	1	1	0	1037.83	50	4.16668	5	82.2044	20.7566
144	1	0	0	1125.26	50	1.99999	1	77.6370	22.5053
234	0	0	1	925.533	50	0	0	57.9138	18.5106
169	0	0	0	1046.4	50	1.49999	2	74.9925	20.9298
117	0	0	1	701.473	50	2.49999	3	78.4277	14.0294
188	0	1	1	1035.39	50	0	0	80.236	20.707
131	0	1	0	1231.81	50	1.33335	3	73.0193	24.6363
126	0	0	1	1224.66	50	3	3	77.9141	24.4932
160	0	0	0	408.325	50	0	0	80.424	8.16651
157	1	0	1	1233.40	50	0.16666	1	88.6122	24.6680
191	0	1	1	1109.04	50	0	0	85.5382	22.1809
220	1	1	1	695.02	50	0	0	74.1336	13.9004
138	1	1	0	773.435	50	0	0	87.2796	15.4687

	1 MS	2 Running	3 Lesion	4 2. Distance moved (cm)	5 2. Arena duration (s)	6 2. Inner zone duration (s)	7 2. Inner Zone frequency	8 2. Velocity max (cm/s)	9 2. Velocity mean (cm/s)
227	0	0	1	425.375	50	0	0	65.3611	8.50751
129	1	1	1	442.162	50	0	0	67.3908	8.84325
207	0	1	1	546.887	50	0	0	65.5009	10.9377
164	1	1	0	603.211	50	1	1	61.2626	12.0642
141	1	0	1	967.614	50	3.16666	3	80.6065	19.3522
174	0	1	0	891.84	50	3.99999	2	76.6464	17.8368
148	1	0	0	315.401	50	0	0	66.5789	6.30803
176	0	0	0	432.08	50	0	0	47.905	8.64160
154	1	0	1	946.45	50	3.33337	3	72.2096	18.9291
122	1	1	0	739.952	50	0	0	70.5515	14.7990
197	1	0	0	933.515	50	7.33333	4	70.5384	18.6703
222	0	1	0	847.015	50	17.8333	7	74.3426	16.9403
193	0	0	1	802.568	50	9.99999	6	68.8646	16.0513
203	0	1	1	478.204	50	0	0	74.4716	9.56409
167	0	0	0	1033.77	50	7.49999	4	85.3255	20.6754
182	1	1	1	862.607	50	0	0	82.7881	17.2521
209	1	0	1	1087.12	50	2.83333	1	71.2619	21.7424
216	1	1	0	662.07	50	18.6666	5	68.6233	13.2415
144	1	0	0	1060.97	50	6.83333	5	85.9136	21.2194
234	0	0	1	506.781	50	0	0	59.8695	10.1356
169	0	0	0	342.729	50	0	0	56.0365	6.8546
117	0	0	1	69.7557	50	0	0	15.2677	1.39511
188	0	1	1	357.459	50	0	0	55.8912	7.1492
131	0	1	0	537.614	50	0.66664	1	75.5723	10.7522
126	0	0	1	872.707	50	1.16666	1	84.1028	17.4541
160	0	0	0	83.5401	50	0	0	24.1592	1.67080
157	1	0	1	567.120	50	0	0	78.9783	11.3424
191	0	1	1	744.234	50	5.83333	2	72.2785	14.8846
220	1	1	1	230.257	50	0	0	61.9989	4.60515

	1 MS	2 Running	3 Lesion	4 3. Distance moved (cm)	5 3. Arena duration (s)	6 3. Inner zone duration (s)	7 3. Inner Zone frequency	8 3. Velocity max (cm/s)	9 3. Velocity mean (cm/s)
227	0	0	1	418.069	50	0	0	78.8164	8.3613
129	1	1	1	639.632	50	0.5	1	67.5830	12.7926
207	0	1	1	200.40	50	0.66666	1	66.0177	4.00812
164	1	1	0	548.098	50	0.99999	2	68.6754	10.9619
141	1	0	1	756.020	50	4.33333	3	84.801	15.1204
174	0	1	0	728.514	50	7.66666	5	73.7395	14.570
148	1	0	0	55.9996	50	0	0	5.20427	1.11999
176	0	0	0	480.099	50	1.99999	1	62.3658	9.60199
154	1	0	1	788.253	50	4.33329	4	73.7712	15.7650
122	1	1	0	648.581	50	0	0	85.5759	12.9716
197	1	0	0	704.64	50	3.66666	3	68.9662	14.0929
222	0	1	0	814.978	50	4.33339	2	68.8002	16.2995
193	0	0	1	575.498	50	2.49999	4	74.4028	11.5099
203	0	1	1	538.128	50	3.49999	2	67.9023	10.7625
167	0	0	0	1020.96	50	14.8333	5	82.5513	20.4193
182	1	1	1	92.3626	50	0	0	18.394	1.84725
209	1	0	1	1225.71	50	12.3333	5	86.4458	24.5143
216	1	1	0	522.253	50	11.6666	5	72.0970	10.4450
144	1	0	0	916.824	50	12.1667	8	89.7284	18.3364
234	0	0	1	134.988	50	0	0	18.602	2.69977
169	0	0	0	225.698	50	0	0	54.224	4.51397
117	0	0	1	31.9607	50	0	0	6.05222	0.63921
188	0	1	1	476.180	50	1.33333	1	69.2382	9.52362
131	0	1	0	449.997	50	2.66666	1	62.7851	8.99994
126	0	0	1	859.403	50	4.33333	2	72.7255	17.1880
160	0	0	0	269.21	50	0	0	71.7485	5.38436
157	1	0	1	671.563	50	2.66666	3	82.0068	13.4312
191	0	1	1	381.25	50	0	0	73.6321	7.62514
220	1	1	1	363.21	50	0	0	75.2474	7.26428
138	1	1	0	648.252	50	2.5	2	104.886	12.9650

	1 MS	2 Running	3 Lesion	4 4. Distance moved (cm)	5 4. Arena duration (s)	6 4. Inner zone duration (s)	7 4. Inner Zone frequency	8 4. Velocity max (cm/s)	9 4. Velocity mean (cm/s)
227	0	0	1	96.0420	50	0	0	11.5730	1.92084
129	1	1	1	494.441	50	0	0	62.7635	9.88883
207	0	1	1	809.170	50	4.66674	2	73.8546	16.1834
164	1	1	0	492.841	50	0	0	73.298	9.85682
141	1	0	1	641.939	50	5.83333	3	73.0656	12.838
174	0	1	0	761.723	50	2.49999	3	72.9165	15.2344
148	1	0	0	55.0967	50	0	0	5.84522	1.10193
176	0	0	0	687.906	50	2.50007	1	68.4675	13.7581
154	1	0	1	377.846	50	0	0	62.5822	7.55693
122	1	1	0	716.554	50	7.8333	3	67.4586	14.331
197	1	0	0	350.438	50	0.33333	1	70.5794	7.00876
222	0	1	0	589.564	50	9.99993	6	76.366	11.7912
193	0	0	1	628.865	50	4.5000	3	79.0940	12.5773
203	0	1	1	652.227	50	5.16666	2	70.2369	13.0445
167	0	0	0	882.799	50	8.49993	4	96.9381	17.6559
182	1	1	1	410.771	50	0	0	74.0754	8.21543
209	1	0	1	847.501	50	6.99993	3	79.9819	16.9500
216	1	1	0	607.793	50	9.66674	4	83.7923	12.1558
144	1	0	0	739.65	50	6.33327	4	75.4693	14.7930
234	0	0	1	77.0861	50	0	0	12.5408	1.54172
169	0	0	0	274.955	50	0	0	52.7725	5.49911
117	0	0	1	34.9753	50	0	0	7.87256	0.69950
188	0	1	1	168.966	50	0	0	52.087	3.37933
131	0	1	0	189.320	50	0	0	67.4518	3.78642
126	0	0	1	605.62	50	0.50007	2	75.3446	12.1125
160	0	0	0	138.240	50	0	0	37.3081	2.76480
157	1	0	1	383.224	50	0.0000	1	78.1133	7.6645
191	0	1	1	647.680	50	1.83333	2	77.2034	12.9536
220	1	1	1	527.636	50	0	0	67.0991	10.5527
138	1	1	0	509.206	50	3.16666	2	76.8407	10.1841

	1 MS	2 Running	3 Lesion	4 5. Distance moved (cm)	5 5. Arena duration (s)	6 5. Inner zone duration (s)	7 5. Inner Zone frequency	8 5. Velocity max (cm/s)	9 5. Velocity mean (cm/s)
227	0	0	1	442.3	50	0	0	56.7422	8.846
129	1	1	1	713.53	50	1.83333	1	69.1669	14.2706
207	0	1	1	564.61	50	7.16658	4	64.7904	11.2923
164	1	1	0	745.42	50	4.16666	3	78.0523	14.9084
141	1	0	1	636.28	50	2.99999	3	71.0850	12.7256
174	0	1	0	725.14	50	9.66676	6	75.9450	14.5028
148	1	0	0	54.263	50	0	0	7.89322	1.08527
176	0	0	0	716.02	50	7.83324	3	65.833	14.3204
154	1	0	1	428.4	50	0	0	71.2660	8.56880
122	1	1	0	535.40	50	6.66666	2	77.7979	10.7080
197	1	0	0	481.73	50	3.49999	3	68.6821	9.63476
222	0	1	0	511.41	50	25.8333	2	65.5611	10.2282
193	0	0	1	779.74	50	7.99991	5	73.8074	15.5948
203	0	1	1	569.21	50	12.3333	4	68.7314	11.3842
167	0	0	0	897.45	50	8.16666	4	87.2045	17.9490
182	1	1	1	919.44	50	1.16676	2	79.1383	18.3889
209	1	0	1	612.32	50	0	0	63.6834	12.2464
216	1	1	0	273.15	50	5.49991	1	50.0353	5.46312
144	1	0	0	450.35	50	2.33333	2	67.598	9.00707
234	0	0	1	421.50	50	2.99998	2	75.3964	8.43007
169	0	0	0	254.29	50	4.33333	2	69.1636	5.08598
117	0	0	1	31.630	50	0	0	5.86204	0.63261
188	0	1	1	67.581	50	0	0	14.252	1.35162
131	0	1	0	912.90	50	1.16666	1	73.0946	18.258
126	0	0	1	513.07	50	1.49991	1	83.9982	10.2614
160	0	0	0	62.477	50	0	0	12.2612	1.24955
157	1	0	1	481.60	50	5.49991	3	84.2208	9.63202
191	0	1	1	313.50	50	0.16666	1	50.9636	6.27002
220	1	1	1	46.051	50	0	0	7.91081	0.92102
138	1	1	0	70.310	50	0	0	10.493	1.40621

	1 MS	2 Running	3 Lesion	4 6. Distance moved (cm)	5 6. Arena duration (s)	6 6. Inner zone duration (s)	7 6. Inner Zone frequency	8 6. Velocity max (cm/s)	9 6. Velocity mean (cm/s)
227	0	0	1	59.2385	50	0	0	13.6270	1.18477
129	1	1	1	311.449	50	0	0	61.9591	6.229
207	0	1	1	207.632	50	0	0	51.2144	4.15265
164	1	1	0	591.185	50	3.6666	2	63.4172	11.8237
141	1	0	1	732.967	50	10.333	5	66.7377	14.6593
174	0	1	0	645.83	50	9.8332	8	72.3618	12.9167
148	1	0	0	60.7176	50	0	0	7.64516	1.21435
176	0	0	0	237.16	50	0.6666	2	74.1858	4.74332
154	1	0	1	590.517	50	2.1666	1	74.2548	11.8103
122	1	1	0	507.703	50	0.3333	1	65.0247	10.1540
197	1	0	0	462.973	50	4.5	2	76.522	9.25947
222	0	1	0	373.601	50	1.6666	3	42.7923	7.47202
193	0	0	1	256.339	50	1.3333	2	47.5567	5.12679
203	0	1	1	57.6190	50	0	0	11.9402	1.15238
167	0	0	0	751.294	50	17.833	4	68.3629	15.025
182	1	1	1	642.892	50	4.8332	2	69.7278	12.8578
209	1	0	1	526.492	50	1.1667	1	57.8719	10.5298
216	1	1	0	280.169	50	1.8333	1	76.7378	5.60338
144	1	0	0	707.116	50	6.5	2	73.0648	14.1423
234	0	0	1	493.242	50	3.3333	3	72.9711	9.86485
169	0	0	0	608.28	50	1.6666	3	65.577	12.1657
117	0	0	1	495.780	50	1.1667	1	77.1665	9.91561
188	0	1	1	239.037	50	1.3334	2	63.574	4.78074
131	0	1	0	76.6083	50	0	0	75.6051	1.53216
126	0	0	1	499.785	50	0	0	77.3195	9.99571
160	0	0	0	90.0662	50	0	0	13.2512	1.80132
157	1	0	1	601.32	50	0.8333	1	82.8502	12.0265
191	0	1	1	166.029	50	0	0	61.7881	3.32059
220	1	1	1	450.223	50	0	0	81.2387	9.00446
138	1	1	0	179.850	50	0	0	32.6709	3.59701

	1 MS	2 Running	3 Lesion	4 7. Distance moved (cm)	5 7. Arena duration (s)	6 7. Inner zone duration (s)	7 7. Inner Zone frequency	8 7. Velocity max (cm/s)	9 7. Velocity mean (cm/s)
227	0	0	1	40.663	50	0	0	6.75551	0.81326
129	1	1	1	329.27	50	0	0	67.8090	6.58541
207	0	1	1	32.05	50	0	0	3.20896	0.641
164	1	1	0	560.86	50	1	1	67.9587	11.2173
141	1	0	1	797.16	50	8.6665	7	77.0268	15.9432
174	0	1	0	367.64	50	0.6666	1	51.8911	7.35282
148	1	0	0	135.35	50	0	0	27.3574	2.70702
176	0	0	0	330.55	50	0	0	66.2400	6.61109
154	1	0	1	305.13	50	0	0	60.8467	6.10259
122	1	1	0	490.07	50	1.1666	2	64.9991	9.80156
197	1	0	0	465.32	50	1.1666	2	53.9802	9.30652
222	0	1	0	220.50	50	0	0	37.5123	4.41002
193	0	0	1	314.30	50	4	1	41.3769	6.28611
203	0	1	1	581.17	50	8.8333	4	77.9913	11.623
167	0	0	0	573.67	50	1.3333	1	85.5594	11.4734
182	1	1	1	590.62	50	1.3333	1	62.351	11.8124
209	1	0	1	525.71	50	3.4998	1	94.3749	10.5143
216	1	1	0	447.94	50	8.9999	4	76.0316	8.95894
144	1	0	0	527.25	50	4.6666	3	73.6165	10.545
234	0	0	1	52.689	50	0	0	4.50384	1.05379
169	0	0	0	266.70	50	0.1666	1	82.0380	5.33411
117	0	0	1	409.07	50	6.8332	4	65.6499	8.18151
188	0	1	1	517.53	50	1.4998	1	73.7124	10.3506
131	0	1	0	45.530	50	0	0	6.1952	0.91061
126	0	0	1	357.03	50	0	0	72.8681	7.14062
160	0	0	0	46.083	50	0	0	7.6214	0.92166
157	1	0	1	665.87	50	18.333	4	77.1182	13.317
191	0	1	1	504.76	50	4.5	2	77.755	10.0953
220	1	1	1	90.358	50	0	0	28.9705	1.80716
138	1	1	0	391.61	50	4.8333	3	92.2624	7.83239

	1 MS	2 Running	3 Lesion	4 8. Distance moved (cm)	5 8. Arena duration (s)	6 8. Inner zone duration (s)	7 8. Inner Zone frequency	8 8. Velocity max (cm/s)	9 8. Velocity mean (cm/s)
227	0	0	1	65.6656	50	0	0	14.5343	1.31331
129	1	1	1	615.29	50	0	0	74.7501	12.3058
207	0	1	1	255.963	50	0	0	63.3046	5.11926
164	1	1	0	357.242	50	0	0	66.8434	7.14485
141	1	0	1	605.916	50	0.8333	1	88.0887	12.1183
174	0	1	0	434.003	50	1.5	1	58.4475	8.68006
148	1	0	0	508.991	50	0	0	63.0594	10.1798
176	0	0	0	469.928	50	0	0	71.0307	9.39856
154	1	0	1	196.597	50	0	0	55.3913	3.93194
122	1	1	0	435.689	50	0	0	58.8229	8.71379
197	1	0	0	271.525	50	0	0	54.5985	5.43050
222	0	1	0	753.060	50	12.5	5	87.8239	15.0612
193	0	0	1	508.009	50	6.1666	2	64.9960	10.1601
203	0	1	1	538.454	50	0.1666	1	70.1454	10.769
167	0	0	0	603.434	50	5.1666	4	93.7607	12.068
182	1	1	1	739.385	50	19.833	3	80.0474	14.7877
209	1	0	1	612.540	50	0	0	62.3498	12.2508
216	1	1	0	43.3618	50	0	0	6.560	0.86723
144	1	0	0	521.55	50	3.1666	4	78.2963	10.4310
234	0	0	1	74.5386	50	0	0	10.1061	1.49077
169	0	0	0	66.4529	50	0	0	9.62427	1.32905
117	0	0	1	131.177	50	0	0	36.8632	2.6235
188	0	1	1	219.428	50	0	0	35.998	4.38856
131	0	1	0	151.928	50	0	0	46.8985	3.03857
126	0	0	1	686.889	50	17.000	8	68.7544	13.737
160	0	0	0	77.3468	50	0	0	11.6227	1.54693
157	1	0	1	546.453	50	10.666	4	74.0014	10.9290
191	0	1	1	499.799	50	0	0	77.8400	9.99600
220	1	1	1	478.301	50	0	0	69.4693	9.56604
138	1	1	0	372.723	50	3.5	1	73.0513	7.45447

	1 MS	2 Running	3 Lesion	4 9. Distance moved (cm)	5 9. Arena duration (s)	6 9. Inner zone duration (s)	7 9. Inner Zone frequency	8 9. Velocity max (cm/s)	9 9. Velocity mean (cm/s)
227	0	0	1	65.2506	50	0	0	7.65741	1.30501
129	1	1	1	165.036	50	0	0	46.1622	3.30073
207	0	1	1	36.8415	50	0	0	4.9709	0.73683
164	1	1	0	421.648	50	0	0	84.2613	8.43296
141	1	0	1	310.622	50	2.1666	1	56.2324	6.2124
174	0	1	0	479.427	50	9.8335	4	65.6822	9.58854
148	1	0	0	445.396	50	2.3333	1	75.4372	8.90793
176	0	0	0	599.493	50	6	2	72.499	11.9898
154	1	0	1	441.500	50	0	0	58.673	8.83001
122	1	1	0	78.5104	50	0	0	13.4593	1.57020
197	1	0	0	188.264	50	0	0	24.9292	3.76529
222	0	1	0	388.168	50	5	1	57.8259	7.76337
193	0	0	1	341.299	50	2.6666	2	67.4950	6.82598
203	0	1	1	379.514	50	2.5	3	59.4991	7.59029
167	0	0	0	443.655	50	2.8333	1	80.8227	8.87311
182	1	1	1	110.913	50	0	0	60.2355	2.21826
209	1	0	1	511.141	50	13.500	4	52.4854	10.2228
216	1	1	0	49.5129	50	0	0	5.71829	0.99025
144	1	0	0	402.706	50	4.1666	1	80.1250	8.05413
234	0	0	1	276.572	50	0	0	46.3059	5.5314
169	0	0	0	430.869	50	0.8333	1	86.9783	8.61739
117	0	0	1	304.078	50	3.3333	2	54.2547	6.08157
188	0	1	1	362.740	50	1	1	54.2869	7.25481
131	0	1	0	354.83	50	0	0	71.0440	7.09678
126	0	0	1	364.015	50	3.3331	2	68.8291	7.28030
160	0	0	0	263.121	50	0	0	43.0867	5.26242
157	1	0	1	424.094	50	0	0	97.0213	8.48188
191	0	1	1	518.964	50	0.1666	1	69.5126	10.379
220	1	1	1	56.5403	50	0	0	10.6572	1.13080
138	1	1	0	158.242	50	0	0	48.9918	3.16485

	1 MS	2 Running	3 Lesion	4 1. Distance moved (cm)	5 1. Arena duration (s)	6 1. Inner zone duration (s)	7 1. Inner Zone frequency	8 1. Velocity max (cm/s)	9 1. Velocity mean (cm/s)
186	1	0	0	884.100	50	0	0	80.3808	17.6820
196	1	1	0	864.474	50	0	0	68.0449	17.289
139	1	0	0	894.913	50	0	0	72.5711	17.8982
198	1	1	1	1022.79	50	0	0	80.1142	20.4558
143	1	0	1	924.966	50	0.83333	1	80.9306	18.4993
145	1	1	1	476.585	50	0	0	72.5553	9.53171
190	1	0	0	839.364	50	0	0	88.1384	16.7872
232	0	1	0	1024.81	50	0	0	71.6393	20.4962
210	0	1	1	900.157	50	5.99999	3	59.6658	18.0031
137	0	1	1	1096.45	50	0	0	79.7224	21.9290
171	0	0	0	1200.67	50	0.66666	1	78.2490	24.0134
219	0	0	0	1061.33	50	0	0	89.648	21.2266
205	0	0	1	931.887	50	0	0	85.4842	18.6377
250	1	0	0	1121.43	50	1.33333	1	79.6765	22.4286
271	1	1	0	477.931	50	0	0	67.3796	9.55864
305	0	1	0	794.479	50	0	0	82.5855	15.8895
301	0	1	1	995.404	50	0	0	78.9310	19.9081
306	1	1	1	1164.69	50	2.83333	4	92.7684	23.2938
309	1	0	1	1088.9	50	1.16666	2	69.857	21.7784
311	0	0	0	662.045	50	4.3333	3	53.5437	13.2409
315	0	0	0	1179.15	50	3.99999	3	79.8865	23.5831
312	0	1	1	702.376	50	0	0	62.9217	14.0475
314	0	1	0	816.885	50	0.66666	2	63.8876	16.3377
313	0	1	0	746.657	50	0	0	68.6992	14.9331
317	1	1	1	661.341	50	0	0	54.630	13.2268
318	1	1	0	1208.02	50	3.16666	2	82.5211	24.1605
319	1	1	0	1238.00	50	2.33333	3	72.7711	24.7601
320	1	1	1	932.303	50	0	0	82.6177	18.6460
324	0	1	0	1023.55	50	0.99999	2	72.6922	20.4710
323	0	1	0	991.764	50	5.66666	4	76.7930	19.8352
322	0	0	1	1106.85	50	1.16666	1	74.4173	22.1371

	1 MS	2 Running	3 Lesion	4 2. Distance moved (cm)	5 2. Arena duration (s)	6 2. Inner zone duration (s)	7 2. Inner Zone frequency	8 2. Velocity max (cm/s)	9 2. Velocity mean (cm/s)
186	1	0	0	684.004	50	1.49999	2	84.0632	13.6800
196	1	1	0	74.5130	50	0	0	12.4749	1.49026
139	1	0	0	573.199	50	0	0	70.3297	11.4639
198	1	1	1	622.639	50	0	0	78.6352	12.4527
143	1	0	1	351.599	50	0	0	70.7954	7.03199
145	1	1	1	126.31	50	0	0	33.3375	2.5262
190	1	0	0	610.39	50	0	0	95.4198	12.2079
232	0	1	0	338.323	50	0	0	46.5253	6.76647
210	0	1	1	745.264	50	4.99999	4	84.5710	14.9053
137	0	1	1	544.35	50	0	0	62.0910	10.8870
171	0	0	0	794.940	50	0	0	74.5254	15.8988
219	0	0	0	573.263	50	0	0	79.9527	11.4652
205	0	0	1	861.697	50	0	0	87.2511	17.2339
250	1	0	0	846.484	50	1.5	2	81.3982	16.929
271	1	1	0	343.194	50	0	0	69.1062	6.86388
305	0	1	0	304.000	50	0	0	74.3298	6.0800
301	0	1	1	581.093	50	0	0	74.3334	11.6218
306	1	1	1	768.535	50	2.66666	4	71.4533	15.3707
309	1	0	1	623.867	50	0	0	68.9330	12.4773
311	0	0	0	573.552	50	4.33333	3	60.8407	11.4710
315	0	0	0	1051.31	50	5.66666	4	83.7889	21.0263
312	0	1	1	247.333	50	0	0	64.7670	4.94667
314	0	1	0	320.585	50	0	0	66.8814	6.41170
313	0	1	0	223.336	50	0	0	46.5265	4.46673
317	1	1	1	265.336	50	0	0	47.2357	5.30673
318	1	1	0	707.064	50	3.99999	3	68.701	14.1413
319	1	1	0	853.174	50	5.33333	5	71.8465	17.0635
320	1	1	1	582.069	50	1.50000	4	63.034	11.6413
324	0	1	0	598.789	50	2.49999	4	74.5791	11.9758
323	0	1	0	707.210	50	0	0	63.2726	14.1442
322	0	0	1	853.738	50	5.49999	2	68.1268	17.0747

	1 MS	2 Running	3 Lesion	4 3. Distance moved (cm)	5 3. Arena duration (s)	6 3. Inner zone duration (s)	7 3. Inner Zone frequency	8 3. Velocity max (cm/s)	9 3. Velocity mean (cm/s)
186	1	0	0	215.18	50	0	0	75.3906	4.3037
196	1	1	0	71.6041	50	0	0	14.5286	1.4320
139	1	0	0	237.133	50	3.00005	2	67.6987	4.7426
198	1	1	1	431.154	50	0	0	74.1863	8.6230
143	1	0	1	600.744	50	0.16666	1	80.9837	12.014
145	1	1	1	439.913	50	0	0	53.8965	8.7982
190	1	0	0	930.1	50	0	0	90.7205	18.602
232	0	1	0	874.18	50	1.33333	1	74.0870	17.483
210	0	1	1	432.141	50	1.33333	3	83.6534	8.6428
137	0	1	1	647.127	50	0	0	68.9129	12.942
171	0	0	0	533.729	50	0	0	67.6153	10.674
219	0	0	0	771.127	50	4.83333	1	76.6587	15.422
205	0	0	1	545.619	50	0	0	91.2098	10.912
250	1	0	0	784.331	50	0.16666	1	76.8461	15.686
271	1	1	0	212.513	50	0	0	60.1612	4.2502
305	0	1	0	266.169	50	0	0	67.8913	5.3233
301	0	1	1	706.79	50	0	0	71.4422	14.135
306	1	1	1	725.971	50	3.33333	2	68.0887	14.519
309	1	0	1	602.403	50	6.99999	3	63.0341	12.048
311	0	0	0	673.640	50	0.16666	1	50.0786	13.472
315	0	0	0	769.416	50	4.66666	2	63.7070	15.388
312	0	1	1	697.684	50	1.99999	1	62.6567	13.953
314	0	1	0	136.984	50	0	0	30.426	2.7396
313	0	1	0	36.4034	50	0	0	7.12330	0.7280
317	1	1	1	311.929	50	0	0	56.9799	6.2385
318	1	1	0	357.795	50	1.5	1	49.0419	7.1559
319	1	1	0	597.881	50	4.16666	5	70.1510	11.957
320	1	1	1	621.706	50	0.33333	1	65.2642	12.434
324	0	1	0	566.734	50	6.3333	4	79.6134	11.334
323	0	1	0	425.281	50	0	0	58.7570	8.5056
322	0	0	1	594.822	50	1.83339	2	68.5900	11.896

	1 MS	2 Running	3 Lesion	4 4. Distance moved (cm)	5 4. Arena duration (s)	6 4. Inner zone duration (s)	7 4. Inner Zone frequency	8 4. Velocity max (cm/s)	9 4. Velocity mean (cm/s)
186	1	0	0	318.742	50	0	0	82.5186	6.3748
196	1	1	0	59.8504	50	0	0	7.5320	1.1970
139	1	0	0	643.035	50	5.16660	4	78.7906	12.860
198	1	1	1	244.980	50	0	0	83.1906	4.8996
143	1	0	1	732.998	50	0.83333	1	81.7459	14.659
145	1	1	1	253.870	50	0	0	65.2001	5.0774
190	1	0	0	805.395	50	1.83333	1	90.0813	16.107
232	0	1	0	512.808	50	3.33333	1	52.0960	10.256
210	0	1	1	576.539	50	9.83332	7	105.208	11.530
137	0	1	1	241.435	50	0	0	70.8727	4.8287
171	0	0	0	377.218	50	0	0	71.1550	7.5443
219	0	0	0	626.073	50	0.66666	1	82.1812	12.521
205	0	0	1	620.247	50	0	0	76.9893	12.404
250	1	0	0	616.428	50	4.33333	2	68.3897	12.328
271	1	1	0	686.012	50	0.83333	1	70.9463	13.720
305	0	1	0	507.954	50	0	0	64.4364	10.159
301	0	1	1	558.841	50	0	0	69.4981	11.176
306	1	1	1	655.084	50	2.16666	1	66.6659	13.101
309	1	0	1	601.988	50	3.33333	2	62.9186	12.039
311	0	0	0	660.735	50	5.49999	2	60.7283	13.214
315	0	0	0	474.525	50	6.33333	3	63.0436	9.4905
312	0	1	1	449.998	50	0	0	55.0655	8.9999
314	0	1	0	169.845	50	0	0	28.511	3.3969
313	0	1	0	563.898	50	2.16666	1	65.9070	11.277
317	1	1	1	778.430	50	0	0	65.1221	15.568
318	1	1	0	492.152	50	7.66666	2	48.9603	9.8430
319	1	1	0	609.195	50	4.33333	4	65.0637	12.183
320	1	1	1	623.658	50	0	0	68.6552	12.473
324	0	1	0	413.283	50	3.66674	2	71.0578	8.2656
323	0	1	0	506.165	50	0.66666	1	80.1196	10.123
322	0	0	1	788.674	50	8.16660	5	71.2097	15.773

	1 MS	2 Running	3 Lesion	4 5. Distance moved (cm)	5 5. Arena duration (s)	6 5. Inner zone duration (s)	7 5. Inner Zone frequency	8 5. Velocity max (cm/s)	9 5. Velocity mean (cm/s)
186	1	0	0	428.29	50	0	0	89.9904	8.56593
196	1	1	0	84.331	50	0	0	17.6169	1.68663
139	1	0	0	106.81	50	0	0	18.7238	2.13629
198	1	1	1	69.034	50	0	0	11.6801	1.38068
143	1	0	1	88.785	50	0	0	16.6887	1.77570
145	1	1	1	374.87	50	0	0	62.4071	7.4974
190	1	0	0	572.82	50	2.83333	1	80.2246	11.456
232	0	1	0	316.80	50	0	0	47.8269	6.33612
210	0	1	1	566.63	50	12.6667	4	68.5437	11.3326
137	0	1	1	612.91	50	0	0	72.3009	12.258
171	0	0	0	651.53	50	1.16666	2	69.9382	13.0306
219	0	0	0	822.36	50	5.33343	6	97.2954	16.4472
205	0	0	1	598.79	50	0	0	76.7809	11.975
250	1	0	0	474.01	50	0	0	57.7621	9.48038
271	1	1	0	651.17	50	5.33333	2	82.1028	13.0235
305	0	1	0	423.31	50	0	0	65.240	8.46625
301	0	1	1	427.10	50	0	0	69.3324	8.54213
306	1	1	1	63.938	50	0	0	11.774	1.27877
309	1	0	1	588.29	50	13.4999	6	62.2787	11.7658
311	0	0	0	653.36	50	5.16666	4	58.0435	13.0673
315	0	0	0	856.92	50	6.16666	1	62.3871	17.1384
312	0	1	1	36.413	50	0	0	4.16484	0.72826
314	0	1	0	65.179	50	0	0	14.1876	1.30358
313	0	1	0	613.76	50	0	0	68.4259	12.2752
317	1	1	1	456.66	50	0	0	64.8094	9.13323
318	1	1	0	628.04	50	5.49999	4	64.2527	12.5609
319	1	1	0	577.01	50	3.16666	4	62.3903	11.5403
320	1	1	1	281.85	50	2.16666	2	51.3213	5.63714
324	0	1	0	431.84	50	20.6665	4	72.9670	8.63681
323	0	1	0	437.05	50	0	0	63.4582	8.74104
322	0	0	1	566.77	50	3.49999	2	62.9999	11.3355

	1 MS	2 Running	3 Lesion	4 6. Distance moved (cm)	5 6. Arena duration (s)	6 6. Inner zone duration (s)	7 6. Inner Zone frequency	8 6. Velocity max (cm/s)	9 6. Velocity mean (cm/s)
186	1	0	0	612.264	50	1.1666	1	74.4908	12.2452
196	1	1	0	56.2635	50	0	0	11.8229	1.12527
139	1	0	0	66.2332	50	0	0	11.0185	1.32466
198	1	1	1	612.801	50	0	0	88.4515	12.2560
143	1	0	1	903.235	50	0.1666	1	75.3283	18.0647
145	1	1	1	219.891	50	0	0	54.0764	4.3978
190	1	0	0	602.501	50	2.6666	2	88.2085	12.0500
232	0	1	0	432.875	50	0.8333	1	68.5493	8.65751
210	0	1	1	352.529	50	5.3332	2	64.7100	7.05059
137	0	1	1	341.735	50	0	0	59.9552	6.83471
171	0	0	0	531.256	50	0.8333	1	54.4216	10.6251
219	0	0	0	288.172	50	0.1665	1	95.7732	5.76345
205	0	0	1	230.921	50	0	0	75.2952	4.61843
250	1	0	0	463.579	50	23.166	3	59.8498	9.27158
271	1	1	0	133.524	50	0	0	70.586	2.6705
305	0	1	0	151.188	50	0	0	67.0429	3.02377
301	0	1	1	616.222	50	0	0	77.7129	12.3244
306	1	1	1	695.497	50	3.8333	5	80.0433	13.9099
309	1	0	1	536.136	50	0	0	56.0559	10.7227
311	0	0	0	560.889	50	18.166	5	56.3655	11.2177
315	0	0	0	494.622	50	11.666	4	51.4865	9.89245
312	0	1	1	33.3993	50	0	0	3.41958	0.66798
314	0	1	0	549.542	50	0	0	67.405	10.9908
313	0	1	0	583.636	50	0	0	79.2806	11.6727
317	1	1	1	78.3254	50	0	0	13.0187	1.56650
318	1	1	0	343.075	50	0	0	55.0494	6.86150
319	1	1	0	696.800	50	4.8333	2	51.8795	13.9360
320	1	1	1	437.572	50	0	0	68.0494	8.75145
324	0	1	0	367.657	50	1.8333	2	59.9293	7.35314
323	0	1	0	362.226	50	2.3333	1	48.6572	7.24452
322	0	0	1	345.14	50	0	0	64.0143	6.90294

	1 MS	2 Running	3 Lesion	4 7. Distance moved (cm)	5 7. Arena duration (s)	6 7. Inner zone duration (s)	7 7. Inner Zone frequency	8 7. Velocity max (cm/s)	9 7. Velocity mean (cm/s)
186	1	0	0	339.13	50	5.1666	1	79.644	6.78266
196	1	1	0	220.24	50	3.1666	1	57.7004	4.40495
139	1	0	0	408.25	50	0	0	54.5064	8.16505
198	1	1	1	81.990	50	0	0	13.5407	1.63981
143	1	0	1	69.505	50	0	0	11.4009	1.39011
145	1	1	1	280.83	50	0	0	71.0603	5.61670
190	1	0	0	517.18	50	5.8333	2	79.372	10.343
232	0	1	0	518.95	50	6.6666	2	72.4806	10.3790
210	0	1	1	463.44	50	7.3333	3	67.6699	9.26889
137	0	1	1	635.58	50	0	0	70.738	12.7116
171	0	0	0	371.76	50	0	0	54.3399	7.4352
219	0	0	0	531.11	50	5.8333	2	76.1813	10.6223
205	0	0	1	71.049	50	0	0	8.87970	1.42099
250	1	0	0	374.32	50	3.8333	2	60.1031	7.48657
271	1	1	0	30.156	50	0	0	5.91846	0.60312
305	0	1	0	189.52	50	0	0	70.8978	3.79053
301	0	1	1	443.01	50	0	0	63.9237	8.86033
306	1	1	1	438.06	50	3.5	1	57.4307	8.76126
309	1	0	1	51.719	50	0	0	11.4522	1.03439
311	0	0	0	159.36	50	0.8333	1	31.6881	3.18728
315	0	0	0	648.85	50	5.6666	3	75.9998	12.9771
312	0	1	1	137.19	50	0	0	38.5706	2.74384
314	0	1	0	310.81	50	0	0	65.5406	6.21619
313	0	1	0	228.98	50	0	0	66.3197	4.57978
317	1	1	1	131.39	50	0	0	14.1766	2.62782
318	1	1	0	677.85	50	4.5001	6	76.3822	13.5570
319	1	1	0	560.55	50	6	4	67.8606	11.2110
320	1	1	1	423.89	50	0	0	73.5994	8.4779
324	0	1	0	527.23	50	19.833	4	59.0770	10.5447
323	0	1	0	584.42	50	10	2	54.9954	11.6884
322	0	0	1	361.1	50	0.6666	2	75.3296	7.22200

	1 MS	2 Running	3 Lesion	4 8. Distance moved (cm)	5 8. Arena duration (s)	6 8. Inner zone duration (s)	7 8. Inner Zone frequency	8 8. Velocity max (cm/s)	9 8. Velocity mean (cm/s)
186	1	0	0	601.719	50	3.3333	1	84.9843	12.0343
196	1	1	0	41.7791	50	0	0	12.7959	0.83558
139	1	0	0	457.894	50	0	0	74.3926	9.15789
198	1	1	1	82.2819	50	0	0	14.5543	1.64563
143	1	0	1	50.9478	50	0	0	6.06729	1.01895
145	1	1	1	441.829	50	0	0	65.4429	8.83659
190	1	0	0	403.239	50	1.3333	2	61.9105	8.06479
232	0	1	0	433.806	50	5.5	1	71.4833	8.67612
210	0	1	1	85.8158	50	0	0	21.4690	1.71631
137	0	1	1	152.215	50	0	0	55.0397	3.04430
171	0	0	0	520.763	50	0.8333	1	63.7060	10.4152
219	0	0	0	525.62	50	8.3333	1	68.9979	10.5125
205	0	0	1	451.143	50	0	0	72.707	9.02287
250	1	0	0	210.441	50	0	0	44.374	4.20883
271	1	1	0	456.301	50	0	0	69.5700	9.12602
305	0	1	0	471.815	50	0	0	65.7995	9.43631
301	0	1	1	350.208	50	0	0	60.8509	7.00416
306	1	1	1	394.114	50	2.8333	3	66.3151	7.88229
309	1	0	1	578.446	50	18.333	7	66.4541	11.5689
311	0	0	0	530.764	50	9.8334	4	53.7081	10.615
315	0	0	0	343.643	50	3.5	2	57.3447	6.87286
312	0	1	1	201.207	50	0.3333	1	63.7772	4.02415
314	0	1	0	73.4857	50	0	0	10.5453	1.46971
313	0	1	0	54.8342	50	0	0	10.0481	1.09668
317	1	1	1	82.4440	50	0	0	14.0797	1.64888
318	1	1	0	466.41	50	10.833	3	54.4538	9.32834
319	1	1	0	498.151	50	7.8334	5	79.4213	9.96303
320	1	1	1	169.944	50	0	0	35.8003	3.39889
324	0	1	0	153.717	50	3.3333	2	42.6327	3.07434
323	0	1	0	178.275	50	2.1666	1	38.3894	3.56550
322	0	0	1	605.393	50	1.1668	1	65.4187	12.1078

	1 MS	2 Running	3 Lesion	4 9. Distance moved (cm)	5 9. Arena duration (s)	6 9. Inner zone duration (s)	7 9. Inner Zone frequency	8 9. Velocity max (cm/s)	9 9. Velocity mean (cm/s)	T f
186	1	0	0	62.5600	50	0	0	8.7284	1.25120	
196	1	1	0	280.588	50	0	0	66.5545	5.61176	
139	1	0	0	349.98	50	3.6666	1	66.6778	6.99976	
198	1	1	1	590.126	50	0	0	74.3812	11.8025	
143	1	0	1	47.8233	50	0	0	8.59685	0.95646	
145	1	1	1	383.293	50	0	0	59.1016	7.66587	
190	1	0	0	466.728	50	0.5	1	73.5900	9.33457	
232	0	1	0	431.014	50	2.8333	2	70.8891	8.62028	
210	0	1	1	456.46	50	14.833	3	59.2461	9.12920	
137	0	1	1	49.519	50	0	0	9.48764	0.99038	
171	0	0	0	386.807	50	7.8333	1	57.6413	7.73615	
219	0	0	0	557.882	50	14.166	2	78.2971	11.1576	
205	0	0	1	481.405	50	0.1666	1	72.6651	9.62812	
250	1	0	0	530.11	50	10.166	3	53.1323	10.6022	
271	1	1	0	557.282	50	5.8333	6	63.9771	11.1456	
305	0	1	0	315.297	50	0	0	70.8035	6.30594	
301	0	1	1	366.339	50	0	0	64.783	7.326	
306	1	1	1	557.622	50	10.333	4	81.3752	11.1524	
309	1	0	1	424.044	50	3.4998	5	56.1580	8.48090	
311	0	0	0	614.479	50	10.166	4	63.5171	12.2895	
315	0	0	0	607.32	50	11.666	2	54.4817	12.1464	
312	0	1	1	417.816	50	0	0	45.818	8.35634	
314	0	1	0	58.2195	50	0	0	6.74681	1.16439	
313	0	1	0	464.834	50	0.3333	1	79.364	9.29669	
317	1	1	1	57.3854	50	0	0	9.09924	1.14770	
318	1	1	0	250.657	50	5.9998	1	50.6405	5.01314	
319	1	1	0	414.416	50	13.499	3	54.8613	8.28832	
320	1	1	1	416.078	50	0	0	60.8266	8.3215	
324	0	1	0	245.826	50	1.6666	2	65.2697	4.91652	
323	0	1	0	64.3066	50	0	0	10.8332	1.28613	
322	0	0	1	622.754	50	11.999	4	62.7724	12.455	

A5.1.4.2.3.1.2. Open Field P63 1min time-bins 1st interval Descriptive Statistics

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total				61	946.97	222.479	28.4855	889.995	1003.95
MS	0			32	931.79	228.388	40.3736	849.449	1014.13
MS	1			29	963.72	218.543	40.5824	880.599	1046.85
Running	0			28	990.21	218.303	41.2554	905.564	1074.86
Running	1			33	910.28	222.650	38.7584	831.340	989.23
Lesion	0			32	959.18	213.889	37.8106	882.074	1036.30
Lesion	1			29	933.49	234.640	43.5716	844.245	1022.75
MS*Running	0	0		15	947.29	249.716	64.4765	809.011	1085.58
MS*Running	0	1		17	918.11	214.649	52.0600	807.747	1028.47
MS*Running	1	0		13	1039.73	171.805	47.6501	935.909	1143.55
MS*Running	1	1		16	901.97	237.627	59.4069	775.355	1028.60
MS*Lesion	0	0		17	955.75	221.534	53.7299	841.854	1069.66
MS*Lesion	0	1		15	904.63	240.672	62.1413	771.352	1037.91
MS*Lesion	1	0		15	963.07	212.559	54.8825	845.368	1080.79
MS*Lesion	1	1		14	964.42	232.835	62.2278	829.990	1098.86
Running*Lesion	0	0		15	971.13	227.710	58.7944	845.037	1097.24
Running*Lesion	0	1		13	1012.22	213.900	59.3252	882.964	1141.48
Running*Lesion	1	0		17	948.64	207.401	50.3023	842.009	1055.28
Running*Lesion	1	1		16	869.53	237.557	59.3894	742.948	996.11
MS*Running*Lesi	0	0	0	8	952.38	279.070	98.6664	719.072	1185.69
MS*Running*Lesi	0	0	1	7	941.49	233.598	88.2919	725.449	1157.53
MS*Running*Lesi	0	1	0	9	958.75	173.170	57.7234	825.647	1091.86
MS*Running*Lesi	0	1	1	8	872.38	257.927	91.1910	656.748	1088.01
MS*Running*Lesi	1	0	0	7	992.57	170.650	64.4998	834.751	1150.40
MS*Running*Lesi	1	0	1	6	1094.74	170.735	69.7022	915.567	1273.91
MS*Running*Lesi	1	1	0	8	937.26	252.526	89.2817	726.151	1148.38
MS*Running*Lesi	1	1	1	8	866.68	233.204	82.4501	671.723	1061.65

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s) -95.00%	1. Inner zone duration (s) +95.00%
Total				61	1.10382	1.67889	0.21496	0.6738	1.53380
MS	0			32	1.29687	1.99044	0.35186	0.5792	2.01450
MS	1			29	0.89080	1.25061	0.23223	0.4151	1.36651
Running	0			28	1.14880	1.62055	0.30625	0.5204	1.77719
Running	1			33	1.06565	1.75096	0.30480	0.4447	1.68652
Lesion	0			32	1.28125	1.66043	0.29352	0.6826	1.87990
Lesion	1			29	0.90804	1.70642	0.31687	0.2589	1.55713
MS*Running	0	0		15	1.56666	2.02445	0.52271	0.4455	2.68777
MS*Running	0	1		17	1.05882	1.99037	0.48273	0.0354	2.08218
MS*Running	1	0		13	0.66666	0.81080	0.22487	0.1767	1.15663
MS*Running	1	1		16	1.07291	1.52141	0.38035	0.2622	1.88362
MS*Lesion	0	0		17	1.32353	1.83945	0.44613	0.3777	2.26928
MS*Lesion	0	1		15	1.26666	2.21449	0.57177	0.0403	2.49301
MS*Lesion	1	0		15	1.23333	1.49443	0.38586	0.4057	2.06092
MS*Lesion	1	1		14	0.52380	0.82652	0.22089	0.0465	1.00103
Running*Lesion	0	0		15	1.07777	1.49452	0.38588	0.2501	1.90541
Running*Lesion	0	1		13	1.23076	1.81370	0.50303	0.1347	2.32678
Running*Lesion	1	0		17	1.46078	1.82053	0.44154	0.5247	2.39681
Running*Lesion	1	1		16	0.64583	1.62489	0.40622	-0.2200	1.51167
MS*Running*Lesi	0	0	0	8	1.31249	1.83967	0.65042	-0.2255	2.85051
MS*Running*Lesi	0	0	1	7	1.85714	2.33021	0.88073	-0.2979	4.01222
MS*Running*Lesi	0	1	0	9	1.33333	1.95078	0.65026	-0.1661	2.83283
MS*Running*Lesi	0	1	1	8	0.75000	2.12131	0.75000	-1.0234	2.52346
MS*Running*Lesi	1	0	0	7	0.80952	1.05158	0.39746	-0.1630	1.78207
MS*Running*Lesi	1	0	1	6	0.50000	0.43461	0.17743	0.0439	0.95609
MS*Running*Lesi	1	1	0	8	1.60416	1.78383	0.63068	0.1128	3.09549
MS*Running*Lesi	1	1	1	8	0.54166	1.06439	0.37632	-0.3481	1.43152

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total				61	1.11475	1.51765	0.19431	0.72606	1.50344
MS	0			32	1.21875	1.62111	0.28657	0.63427	1.80322
MS	1			29	1.00000	1.41421	0.26261	0.46206	1.53793
Running	0			28	1.14285	1.43279	0.27077	0.58727	1.69843
Running	1			33	1.09090	1.60786	0.27989	0.52078	1.66103
Lesion	0			32	1.28125	1.52895	0.27028	0.73000	1.83249
Lesion	1			29	0.93103	1.51022	0.28044	0.35657	1.50549
MS*Running	0	0		15	1.46666	1.80739	0.46666	0.46576	2.46756
MS*Running	0	1		17	1.00000	1.45773	0.35355	0.25050	1.74950
MS*Running	1	0		13	0.76923	0.72501	0.20108	0.33111	1.20735
MS*Running	1	1		16	1.18750	1.79698	0.44924	0.22995	2.14504
MS*Lesion	0	0		17	1.35294	1.45521	0.35294	0.60473	2.10114
MS*Lesion	0	1		15	1.06666	1.83095	0.47274	0.05272	2.08061
MS*Lesion	1	0		15	1.20000	1.65615	0.42761	0.28285	2.11714
MS*Lesion	1	1		14	0.78571	1.12171	0.29979	0.13805	1.43337
Running*Lesion	0	0		15	0.86666	1.12546	0.29059	0.24340	1.48992
Running*Lesion	0	1		13	1.46153	1.71344	0.47522	0.42611	2.49696
Running*Lesion	1	0		17	1.64705	1.76568	0.42824	0.73922	2.55489
Running*Lesion	1	1		16	0.50000	1.21106	0.30276	-0.14532	1.14532
MS*Running*Les	0	0	0	8	1.12500	1.35620	0.47949	-0.00881	2.25881
MS*Running*Les	0	0	1	7	1.85714	2.26778	0.85714	-0.24021	3.95449
MS*Running*Les	0	1	0	9	1.55555	1.58989	0.52996	0.33345	2.77766
MS*Running*Les	0	1	1	8	0.37500	1.06066	0.37500	-0.51173	1.26173
MS*Running*Les	1	0	0	7	0.57142	0.78679	0.29738	-0.15623	1.29909
MS*Running*Les	1	0	1	6	1.00000	0.63245	0.25819	0.33627	1.66372
MS*Running*Les	1	1	0	8	1.75000	2.05287	0.72580	0.03375	3.46624
MS*Running*Les	1	1	1	8	0.62500	1.40788	0.49776	-0.55202	1.80202

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total				61	76.9363	9.8057	1.25549	74.4250	79.4477
MS	0			32	75.4844	10.8664	1.92092	71.5666	79.4021
MS	1			29	78.5385	8.3811	1.55634	75.3505	81.7265
Running	0			28	77.6537	9.2334	1.74495	74.0734	81.2341
Running	1			33	76.3276	10.3691	1.80503	72.6509	80.0044
Lesion	0			32	77.5113	9.5947	1.69612	74.0521	80.9706
Lesion	1			29	76.3018	10.1648	1.88756	72.4353	80.1683
MS*Running	0	0		15	75.9880	11.1183	2.87074	69.8309	82.1452
MS*Running	0	1		17	75.0400	10.9619	2.65866	69.4039	80.6761
MS*Running	1	0		13	79.5757	6.3351	1.75706	75.7474	83.4040
MS*Running	1	1		16	77.6957	9.8652	2.46632	72.4389	82.9526
MS*Lesion	0	0		17	75.7540	10.8551	2.63276	70.1728	81.3352
MS*Lesion	0	1		15	75.1788	11.2518	2.90521	68.9477	81.4099
MS*Lesion	1	0		15	79.5030	7.8215	2.01951	75.1715	83.8344
MS*Lesion	1	1		14	77.5051	9.1207	2.43762	72.2389	82.7713
Running*Lesion	0	0		15	78.4610	8.8047	2.27338	73.5851	83.3370
Running*Lesion	0	1		13	76.7222	9.9812	2.76830	70.6906	82.7539
Running*Lesion	1	0		17	76.6734	10.4373	2.53142	71.3070	82.0398
Running*Lesion	1	1		16	75.9603	10.6251	2.65629	70.2985	81.6220
MS*Running*Les	0	0	0	8	76.7505	10.5589	3.73315	67.9230	85.5780
MS*Running*Les	0	0	1	7	75.1166	12.5183	4.73147	63.5391	86.6942
MS*Running*Les	0	1	0	9	74.8683	11.6721	3.89070	65.8963	83.8403
MS*Running*Les	0	1	1	8	75.2332	10.9031	3.85486	66.1179	84.3485
MS*Running*Les	1	0	0	7	80.4160	6.5158	2.46277	74.3898	86.4422
MS*Running*Les	1	0	1	6	78.5954	6.5751	2.68430	71.6952	85.4956
MS*Running*Les	1	1	0	8	78.7041	9.1868	3.24805	71.0237	86.3845
MS*Running*Les	1	1	1	8	76.6873	11.0375	3.90237	67.4597	85.9150

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total				61	18.9395	4.44958	0.56971	17.7999	20.0791
MS	0			32	18.6358	4.56776	0.80747	16.9890	20.2827
MS	1			29	19.2745	4.37086	0.81164	17.6120	20.9371
Running	0			28	19.8042	4.36606	0.82510	18.1113	21.4972
Running	1			33	18.2057	4.45300	0.77516	16.6268	19.7847
Lesion	0			32	19.1838	4.27778	0.75621	17.6414	20.7261
Lesion	1			29	18.6699	4.69281	0.87143	16.8849	20.4550
MS*Running	0	0		15	18.9460	4.99433	1.28953	16.1802	21.7117
MS*Running	0	1		17	18.3622	4.29298	1.04120	16.1549	20.5694
MS*Running	1	0		13	20.7946	3.43610	0.95300	18.7182	22.8710
MS*Running	1	1		16	18.0395	4.75256	1.18814	15.5071	20.5720
MS*Lesion	0	0		17	19.1151	4.43069	1.07460	16.8371	21.3932
MS*Lesion	0	1		15	18.0926	4.81345	1.24282	15.4270	20.7582
MS*Lesion	1	0		15	19.2616	4.25118	1.09765	16.9073	21.6158
MS*Lesion	1	1		14	19.2885	4.65670	1.24455	16.5998	21.9772
Running*Lesion	0	0		15	19.4227	4.55420	1.17589	16.9007	21.9448
Running*Lesion	0	1		13	20.2444	4.27800	1.18650	17.6592	22.8296
Running*Lesion	1	0		17	18.9729	4.14803	1.00604	16.8401	21.1056
Running*Lesion	1	1		16	17.3906	4.75115	1.18778	14.8589	19.9224
MS*Running*Les	0	0	0	8	19.0476	5.58142	1.97333	14.3814	23.7138
MS*Running*Les	0	0	1	7	18.8298	4.67197	1.76583	14.5089	23.1506
MS*Running*Les	0	1	0	9	19.1751	3.46340	1.15446	16.5129	21.8373
MS*Running*Les	0	1	1	8	17.4476	5.15854	1.82382	13.1349	21.7602
MS*Running*Les	1	0	0	7	19.8515	3.41301	1.28999	16.6950	23.0080
MS*Running*Les	1	0	1	6	21.8948	3.41470	1.39404	18.3113	25.4783
MS*Running*Les	1	1	0	8	18.7453	5.05053	1.78563	14.5230	22.9677
MS*Running*Les	1	1	1	8	17.3337	4.66408	1.64900	13.4344	21.2330

A5.1.4.2.3.1.3. Open Field P63 1 min intervals 1st interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	5454467	1	5454467	1060.58	0.00000
MS	2599	1	2599	0.505	0.48024
Running	11263	1	11263	2.190	0.14482
Lesion	4057	1	4057	0.079	0.77991
MS*Running	4577	1	4577	0.890	0.34976
MS*Lesion	1561	1	1561	0.304	0.58397
Running*Lesion	5794	1	5794	1.127	0.29330
MS*Running*Lesion	889	1	889	0.173	0.67917
Error	272572	53	5142		

A5.1.4.2.3.1.4. Open Field P63 1 min intervals 1st interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 1. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	71.307(	1	71.3076:	24.2264'	0.00000
MS	3.038[	1	3.0385:	1.0323:	0.31423(
Running	0.058[	1	0.0587'	0.0199'	0.88816
Lesion	1.871:	1	1.8713:	0.6357'	0.42880.
MS*Running	3.475[	1	3.4757[	1.1808[	0.28209.
MS*Lesion	1.671(	1	1.6716.	0.5679:	0.45441(
Running*Lesion	3.326[	1	3.3267[	1.1302(	0.29254(
MS*Running*Lesion	0.132:	1	0.1322:	0.0449:	0.83295(
Error	155.999(	53	2.9433[		

A5.1.4.2.3.1.5. Open Field P63 1 min intervals 1st interval Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 1. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	73.798[	1	73.7985:	32.3467:	0.00000
MS	0.877[	1	0.8779.	0.3848:	0.53769[
Running	0.057[	1	0.0578.	0.0253[	0.87409[
Lesion	1.232.	1	1.2324:	0.5401[	0.46559[
MS*Running	3.236:	1	3.2361.	1.4184.	0.23896'
MS*Lesion	0.057[	1	0.0578.	0.0253[	0.87409[
Running*Lesion	11.297'	1	11.2977:	4.9519:	0.03034(
MS*Running*Lesion	0.121:	1	0.1212'	0.0531(	0.81854[
Error	120.918'	53	2.2814[		

A5.1.4.2.3.1.6. Open Field P63 1 min intervals 1st interval Inner zone Frequency post hoc Newman Keuls test (Running*Lesion)

Cell No.	Newman-Keuls test; variable 1. Inner Zone frequency (P63 1 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 2.2815, df = 53.000 Running	Lesion	{1} .86667	{2} 1.4615	{3} 1.6471	{4} .50000
1	0	0		0.28419:	0.33833:	0.50779[
2	0	1	0.28419:		0.73721[	0.19686[
3	1	0	0.33833:	0.73721[		0.17083(
4	1	1	0.50779[	0.19686[	0.17083(	

A5.1.4.2.3.1.7. Open Field P63 1 min intervals 1st interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	357232.1	1	357232.1	3406.96	0.00000
MS	145.4	1	145.4	1.386	0.24425
Running	27.3	1	27.3	0.260	0.61216
Lesion	24.5	1	24.5	0.234	0.63069
MS*Running	3.2	1	3.2	0.031	0.86127
MS*Lesion	6.2	1	6.2	0.059	0.80877
Running*Lesion	3.1	1	3.1	0.029	0.86511
MS*Running*Lesion	4.5	1	4.5	0.043	0.83614
Error	5557.2	53	104.9		

A5.1.4.2.3.1.8. Open Field P63 1 min intervals 1st interval Mean velocity ANOVA

Effect	Univariate Tests of Significance for 1. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	21817.89	1	21817.89	1060.58	0.00000
MS	10.40	1	10.40	0.505	0.48024
Running	45.05	1	45.05	2.190	0.14482
Lesion	1.62	1	1.62	0.079	0.77991
MS*Running	18.31	1	18.31	0.890	0.34976
MS*Lesion	6.24	1	6.24	0.304	0.58397
Running*Lesion	23.18	1	23.18	1.127	0.29330
MS*Running*Lesion	3.56	1	3.56	0.173	0.67917
Error	1090.29	53	20.57		

A5.1.4.2.3.2.1. Open Field P63 1min time-bins 2nd interval Descriptive Statistics

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level o Factor	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total				61	598.357	265.705	34.020	530.306	666.40
MS	0			32	571.605	261.448	46.218	477.343	665.86
MS	1			29	627.876	271.816	50.475	524.482	731.27
Running	0			28	673.056	288.079	54.441	561.350	784.76
Running	1			33	534.975	230.923	40.198	453.093	616.85
Lesion	0			32	606.831	270.470	47.812	509.317	704.34
Lesion	1			29	589.005	264.800	49.172	488.280	689.73
MS*Running	0	0		15	618.521	311.201	80.351	446.183	790.85
MS*Running	0	1		17	530.208	209.318	50.767	422.587	637.83
MS*Running	1	0		13	735.981	256.384	71.108	581.049	890.91
MS*Running	1	1		16	540.040	258.791	64.697	402.140	677.94
MS*Lesion	0	0		17	567.877	286.405	69.463	420.621	715.13
MS*Lesion	0	1		15	575.830	239.950	61.954	442.950	708.71
MS*Lesion	1	0		15	650.980	253.587	65.476	510.548	791.41
MS*Lesion	1	1		14	603.121	297.668	79.555	431.253	774.99
Running*Lesion	0	0		15	660.611	294.064	75.927	497.764	823.45
Running*Lesion	0	1		13	687.415	292.274	81.062	510.796	864.03
Running*Lesion	1	0		17	559.379	246.916	59.885	432.426	686.33
Running*Lesion	1	1		16	509.046	217.571	54.392	393.111	624.98
MS*Running*Lesi	0	0	0	8	610.649	336.254	118.883	329.533	891.76
MS*Running*Lesi	0	0	1	7	627.517	306.407	115.811	344.138	910.89
MS*Running*Lesi	0	1	0	9	529.857	248.328	82.776	338.975	720.74
MS*Running*Lesi	0	1	1	8	530.603	172.248	60.899	386.600	674.60
MS*Running*Lesi	1	0	0	7	717.710	250.456	94.663	486.076	949.34
MS*Running*Lesi	1	0	1	6	757.297	285.433	116.527	457.752	1056.84
MS*Running*Lesi	1	1	0	8	592.591	257.869	91.170	377.006	808.17
MS*Running*Lesi	1	1	1	8	487.489	265.904	94.011	265.188	709.79

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total				61	2.19945	3.87523	0.49617	1.2069	3.19194
MS	0			32	2.18749	3.95692	0.69949	0.7608	3.61412
MS	1			29	2.21264	3.85292	0.71547	0.7470	3.67821
Running	0			28	2.16666	2.99038	0.56512	1.0071	3.32621
Running	1			33	2.22727	4.53990	0.79029	0.6174	3.83705
Lesion	0			32	2.91145	4.73736	0.83745	1.2034	4.61945
Lesion	1			29	1.41379	2.47271	0.45917	0.4732	2.35436
MS*Running	0	0		15	2.27777	3.39038	0.87539	0.4002	4.15530
MS*Running	0	1		17	2.10784	4.50151	1.09177	-0.2066	4.42230
MS*Running	1	0		13	2.03846	2.58392	0.71665	0.4770	3.59991
MS*Running	1	1		16	2.35416	4.72458	1.18114	-0.1633	4.87171
MS*Lesion	0	0		17	2.49999	4.62068	1.12067	0.1242	4.87573
MS*Lesion	0	1		15	1.83333	3.16478	0.81714	0.0807	3.58593
MS*Lesion	1	0		15	3.37777	4.98547	1.28724	0.6169	6.13863
MS*Lesion	1	1		14	0.96428	1.40082	0.37438	0.1554	1.77310
Running*Lesion	0	0		15	2.31111	3.07051	0.79280	0.6107	4.01150
Running*Lesion	0	1		13	2.00000	3.01078	0.83504	0.1806	3.81940
Running*Lesion	1	0		17	3.44117	5.88191	1.42657	0.4169	6.46537
Running*Lesion	1	1		16	0.93750	1.90309	0.47577	-0.0765	1.95158
MS*Running*Lesi	0	0	0	8	2.18749	3.13636	1.10887	-0.4345	4.80956
MS*Running*Lesi	0	0	1	7	2.38095	3.91425	1.47945	-1.2391	6.00103
MS*Running*Lesi	0	1	0	9	2.77777	5.82320	1.94106	-1.6983	7.25388
MS*Running*Lesi	0	1	1	8	1.35416	2.51730	0.89000	-0.7503	3.45868
MS*Running*Lesi	1	0	0	7	2.45238	3.23710	1.22351	-0.5414	5.44620
MS*Running*Lesi	1	0	1	6	1.55556	1.71162	0.69876	-0.2406	3.35180
MS*Running*Lesi	1	1	0	8	4.18749	6.25479	2.21140	-1.0416	9.41663
MS*Running*Lesi	1	1	1	8	0.52083	1.01354	0.35834	-0.3265	1.36818

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total				61	1.40983	1.94402	0.24890	0.91194	1.90772
MS	0			32	1.25000	1.98380	0.35069	0.53476	1.96523
MS	1			29	1.58620	1.91828	0.35621	0.85653	2.31588
Running	0			28	1.42857	1.85449	0.35046	0.70947	2.14767
Running	1			33	1.39393	2.04541	0.35606	0.66866	2.11921
Lesion	0			32	1.75000	2.10988	0.37297	0.98930	2.51069
Lesion	1			29	1.03448	1.70047	0.31577	0.38765	1.68131
MS*Running	0	0		15	1.33333	1.98806	0.51331	0.23238	2.43428
MS*Running	0	1		17	1.17647	2.03823	0.49434	0.12850	2.22443
MS*Running	1	0		13	1.53846	1.76141	0.48852	0.47405	2.60287
MS*Running	1	1		16	1.62500	2.09364	0.52341	0.50937	2.74062
MS*Lesion	0	0		17	1.47058	2.15399	0.52242	0.36310	2.57807
MS*Lesion	0	1		15	1.00000	1.81265	0.46802	-0.00381	2.00381
MS*Lesion	1	0		15	2.06666	2.08623	0.53866	0.91134	3.22198
MS*Lesion	1	1		14	1.07142	1.63915	0.43808	0.12501	2.01784
Running*Lesion	0	0		15	1.60000	1.91982	0.49569	0.53683	2.66316
Running*Lesion	0	1		13	1.23076	1.83275	0.50831	0.12324	2.33828
Running*Lesion	1	0		17	1.88235	2.31523	0.56152	0.69197	3.07273
Running*Lesion	1	1		16	0.87500	1.62788	0.40697	0.00756	1.74243
MS*Running*Les	0	0	0	8	1.37500	1.92261	0.67974	-0.23234	2.98234
MS*Running*Les	0	0	1	7	1.28571	2.21467	0.83706	-0.76251	3.33394
MS*Running*Les	0	1	0	9	1.55555	2.45515	0.81838	-0.33164	3.44275
MS*Running*Les	0	1	1	8	0.75000	1.48804	0.52610	-0.49403	1.99403
MS*Running*Les	1	0	0	7	1.85714	2.03540	0.76930	-0.02528	3.73957
MS*Running*Les	1	0	1	6	1.16666	1.47196	0.60092	-0.37806	2.71139
MS*Running*Les	1	1	0	8	2.25000	2.25198	0.79619	0.36729	4.13270
MS*Running*Les	1	1	1	8	1.00000	1.85164	0.65465	-0.54801	2.54801

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total				61	67.7345	16.3982	2.09958	63.5347	71.9343
MS	0			32	66.0612	16.4551	2.90888	60.1285	71.9939
MS	1			29	69.5809	16.4227	3.04963	63.3340	75.8278
Running	0			28	69.9430	17.7163	3.34807	63.0733	76.8127
Running	1			33	65.8606	15.2143	2.64848	60.4658	71.2554
Lesion	0			32	68.1374	17.7131	3.13127	61.7512	74.5237
Lesion	1			29	67.2899	15.1148	2.80675	61.5405	73.0393
MS*Running	0	0		15	64.0919	21.5645	5.56794	52.1498	76.0339
MS*Running	0	1		17	67.7989	10.5297	2.55383	62.3850	73.2127
MS*Running	1	0		13	76.6944	8.4556	2.34517	71.5847	81.8040
MS*Running	1	1		16	63.8012	19.1512	4.78780	53.5962	74.0062
MS*Lesion	0	0		17	65.3653	16.4670	3.99385	56.8987	73.8319
MS*Lesion	0	1		15	66.8499	16.9826	4.38489	57.4452	76.2546
MS*Lesion	1	0		15	71.2792	19.1032	4.93243	60.7001	81.8582
MS*Lesion	1	1		14	67.7613	13.4539	3.59571	59.9932	75.5294
Running*Lesion	0	0		15	71.1184	18.1922	4.69721	61.0439	81.1929
Running*Lesion	0	1		13	68.5868	17.7868	4.93317	57.8383	79.3353
Running*Lesion	1	0		17	65.5072	17.3963	4.21922	56.5628	74.4515
Running*Lesion	1	1		16	66.2361	13.0659	3.26647	59.2738	73.1985
MS*Running*Les	0	0	0	8	64.0668	21.1502	7.47774	46.3848	81.7489
MS*Running*Les	0	0	1	7	64.1205	23.7314	8.96963	42.1726	86.0684
MS*Running*Les	0	1	0	9	66.5196	12.1543	4.05145	57.1769	75.8622
MS*Running*Les	0	1	1	8	69.2381	8.9512	3.16473	61.7547	76.7215
MS*Running*Les	1	0	0	7	79.1774	10.4053	3.93286	69.5540	88.8008
MS*Running*Les	1	0	1	6	73.7975	4.7922	1.95644	68.7683	78.8266
MS*Running*Les	1	1	0	8	64.3682	22.8056	8.06301	45.3022	83.4342
MS*Running*Les	1	1	1	8	63.2342	16.2819	5.75653	49.6222	76.8462

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total				61	11.9671	5.31410	0.68040	10.6061	13.3281
MS	0			32	11.4321	5.22897	0.92436	9.5468	13.3173
MS	1			29	12.5575	5.43633	1.00950	10.4896	14.6254
Running	0			28	13.4611	5.76159	1.08883	11.2270	15.6952
Running	1			33	10.6995	4.61846	0.80397	9.0618	12.3371
Lesion	0			32	12.1366	5.40940	0.95625	10.1863	14.0869
Lesion	1			29	11.7801	5.29601	0.98344	9.7656	13.7946
MS*Running	0	0		15	12.3704	6.22402	1.60703	8.9236	15.8171
MS*Running	0	1		17	10.6041	4.18636	1.01534	8.4517	12.7566
MS*Running	1	0		13	14.7196	5.12768	1.42216	11.6210	17.8182
MS*Running	1	1		16	10.8008	5.17583	1.29395	8.0428	13.5588
MS*Lesion	0	0		17	11.3575	5.72811	1.38927	8.4124	14.3026
MS*Lesion	0	1		15	11.5166	4.79900	1.23909	8.8590	14.1742
MS*Lesion	1	0		15	13.0196	5.07175	1.30952	10.2109	15.8282
MS*Lesion	1	1		14	12.0624	5.95336	1.59110	8.6250	15.4998
Running*Lesion	0	0		15	13.2122	5.88128	1.51854	9.9552	16.4691
Running*Lesion	0	1		13	13.7483	5.84548	1.62124	10.2159	17.2807
Running*Lesion	1	0		17	11.1875	4.93832	1.19771	8.6485	13.7266
Running*Lesion	1	1		16	10.1809	4.35142	1.08785	7.8622	12.4996
MS*Running*Les	0	0	0	8	12.2129	6.72509	2.37768	6.5906	17.8353
MS*Running*Les	0	0	1	7	12.5503	6.12815	2.31622	6.8827	18.2179
MS*Running*Les	0	1	0	9	10.5971	4.96656	1.65552	6.7795	14.4148
MS*Running*Les	0	1	1	8	10.6120	3.44497	1.21798	7.7320	13.4921
MS*Running*Les	1	0	0	7	14.3542	5.00913	1.89327	9.7215	18.9868
MS*Running*Les	1	0	1	6	15.1459	5.70867	2.33055	9.1550	21.1368
MS*Running*Les	1	1	0	8	11.8518	5.15739	1.82341	7.5401	16.1635
MS*Running*Les	1	1	1	8	9.7498	5.31808	1.88022	5.3037	14.1958

A5.1.4.2.3.2.2. Open Field P63 1 min intervals 2nd interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 2. Distance moved (cm) (P63 1 min tin Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2215209	1	2215209	308.967	0.00000
MS	6184	1	6184	0.862	0.35722
Running	30833	1	30833	4.300	0.04297
Lesion	2157	1	2157	0.030	0.86294
MS*Running	4436	1	4436	0.618	0.43498
MS*Lesion	649	1	649	0.090	0.76455
Running*Lesion	2431	1	2431	0.339	0.56279
MS*Running*Lesion	1554	1	1554	0.216	0.64341
Error	379995	53	7169		

A5.1.4.2.3.2.3. Open Field P63 1 min intervals 2nd interval distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Distance moved (cm) (P63 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 71697., df = 53.000

Cell No.	Running	{1} 673.06	{2} 534.98
1	0		0.049944
2	1	0.049944	

A5.1.4.2.3.2.4. Open Field P63 1 min intervals 2nd interval Inner Zone duration ANOVA

Univariate Tests of Significance for 2. Inner zone duration (s) (P63 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	285.230	1	285.230	18.1046	0.00008
MS	0.000	1	0.000	0.0000	0.99691
Running	0.065	1	0.065	0.0041	0.94884
Lesion	31.562	1	31.562	2.0033	0.16279
MS*Running	1.215	1	1.215	0.0771	0.78228
MS*Lesion	10.447	1	10.447	0.6631	0.41909
Running*Lesion	18.096	1	18.096	1.1486	0.28869
MS*Running*Lesion	1.249	1	1.249	0.0793	0.77932
Error	834.990	53	15.754		

A5.1.4.2.3.2.5. Open Field P63 1 min intervals 2nd Inner Zone frequency ANOVA

Univariate Tests of Significance for 2. Inner Zone frequency (P63 1 min ti
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	118.796	1	118.796	29.3919	0.00000
MS	1.607	1	1.607	0.3977	0.53096
Running	0.015	1	0.015	0.0038	0.95063
Lesion	7.559	1	7.559	1.8702	0.17722
MS*Running	0.317	1	0.317	0.0786	0.78026
MS*Lesion	1.028	1	1.028	0.2543	0.61611
Running*Lesion	1.530	1	1.530	0.3786	0.54095
MS*Running*Lesion	0.023	1	0.023	0.0057	0.94001
Error	214.216	53	4.041		

A5.1.4.2.3.2.6. Open Field P63 1 min intervals 2nd Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	278803.	1	278803.	1018.09	0.00000
MS	260.1	1	260.1	0.950	0.33418
Running	298.0	1	298.0	1.088	0.30161
Lesion	13.2	1	13.2	0.048	0.82729
MS*Running	1020.4	1	1020.4	3.726	0.05892
MS*Lesion	81.1	1	81.1	0.296	0.58862
Running*Lesion	44.9	1	44.9	0.164	0.68714
MS*Running*Lesion	2.4	1	2.4	0.009	0.92653
Error	14514.0	53	273.8		

A5.1.4.2.3.2.7. Open Field P63 1 min intervals 2nd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	8860.84	1	8860.84	308.967	0.00000
MS	24.738	1	24.738	0.862	0.35722
Running	123.33	1	123.33	4.300	0.04297
Lesion	0.863	1	0.863	0.030	0.86294
MS*Running	17.747	1	17.747	0.618	0.43498
MS*Lesion	2.599	1	2.599	0.090	0.76455
Running*Lesion	9.726	1	9.726	0.339	0.56279
MS*Running*Lesion	6.217	1	6.217	0.216	0.64341
Error	1519.98	53	28.679		

A5.1.4.2.3.2.8. Open Field P63 1 min intervals 2nd interval Mean velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 2. Velocity mean (cm/s) (P63 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 28.679, df = 53.000		
	Running	{1} 13.461	{2} 10.700
1	0		0.04994
2	1	0.04994	

A5.1.4.2.3.3.1. Open Field P63 1min time-bins 3rd interval Descriptive Statistics

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	3. Distance moved (cm) Mean	3. Distance moved (cm) Std.Dev.	3. Distance moved (cm) Std.Err	3. Distance moved (cm) -95.00%	3. Distance moved (cm) +95.00%
Total				61	524.672	263.813	33.777	457.106	592.23
MS	0			32	508.850	253.966	44.895	417.286	600.41
MS	1			29	542.131	277.715	51.570	436.493	647.76
Running	0			28	585.471	300.140	56.721	469.088	701.85
Running	1			33	473.085	220.243	38.339	394.990	551.18
Lesion	0			32	515.448	280.958	49.666	414.152	616.74
Lesion	1			29	534.850	248.067	46.064	440.490	629.21
MS*Running	0	0		15	526.950	276.682	71.439	373.729	680.17
MS*Running	0	1		17	492.880	239.591	58.109	369.693	616.06
MS*Running	1	0		13	652.995	322.734	89.510	457.968	848.02
MS*Running	1	1		16	452.054	203.310	50.827	343.717	560.39
MS*Lesion	0	0		17	531.949	281.257	68.215	387.340	676.55
MS*Lesion	0	1		15	482.671	225.897	58.326	357.573	607.77
MS*Lesion	1	0		15	496.747	289.272	74.689	336.554	656.94
MS*Lesion	1	1		14	590.756	266.607	71.253	436.821	744.69
Running*Lesion	0	0		15	572.542	307.939	79.509	402.010	743.07
Running*Lesion	0	1		13	600.389	302.669	83.945	417.488	783.29
Running*Lesion	1	0		17	465.072	253.408	61.460	334.781	595.36
Running*Lesion	1	1		16	481.600	186.641	46.660	382.145	581.05
MS*Running*Les	0	0	0	8	592.987	269.528	95.292	367.656	818.31
MS*Running*Les	0	0	1	7	451.480	285.327	107.843	187.596	715.36
MS*Running*Les	0	1	0	9	477.694	295.989	98.663	250.176	705.21
MS*Running*Les	0	1	1	8	509.964	174.509	61.698	364.070	655.85
MS*Running*Les	1	0	0	7	549.175	367.851	139.034	208.969	889.38
MS*Running*Les	1	0	1	6	774.117	234.321	95.661	528.212	1020.02
MS*Running*Les	1	1	0	8	450.872	214.985	76.008	271.140	630.60
MS*Running*Les	1	1	1	8	453.235	205.800	72.761	281.182	625.28

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Inner zone duration (s) Mean	3. Inner zone duration (s) Std.Dev.	3. Inner zone duration (s) Std.Err	3. Inner zone duration (s) -95.00%	3. Inner zone duration (s) +95.00%
Total				61	2.31421	3.43621	0.43996	1.4341	3.19426
MS	0			32	2.07292	3.14636	0.55620	0.9385	3.20730
MS	1			29	2.58046	3.76851	0.69979	1.1470	4.01393
Running	0			28	3.03572	4.10896	0.77652	1.4424	4.62901
Running	1			33	1.70202	2.65549	0.46226	0.7604	2.64362
Lesion	0			32	2.77084	3.94945	0.69817	1.3469	4.19477
Lesion	1			29	1.81034	2.74430	0.50960	0.7664	2.85422
MS*Running	0	0		15	2.34445	3.92007	1.01216	0.1735	4.51531
MS*Running	0	1		17	1.83333	2.36731	0.57415	0.6161	3.05049
MS*Running	1	0		13	3.83334	4.33281	1.20170	1.2150	6.45163
MS*Running	1	1		16	1.56249	3.00423	0.75106	-0.0383	3.16334
MS*Lesion	0	0		17	2.87255	3.99589	0.96914	0.8180	4.92705
MS*Lesion	0	1		15	1.16667	1.41981	0.36659	0.3804	1.95293
MS*Lesion	1	0		15	2.65556	4.03284	1.04127	0.4222	4.88887
MS*Lesion	1	1		14	2.50000	3.61384	0.96584	0.4134	4.58657
Running*Lesion	0	0		15	3.03334	4.64204	1.19857	0.4626	5.60402
Running*Lesion	0	1		13	3.03846	3.58441	0.99413	0.8724	5.20450
Running*Lesion	1	0		17	2.53921	3.35334	0.81330	0.8150	4.26334
Running*Lesion	1	1		16	0.81250	1.18770	0.29692	0.1796	1.44538
MS*Running*Les	0	0	0	8	3.31250	5.09081	1.79987	-0.9435	7.56853
MS*Running*Les	0	0	1	7	1.23810	1.71555	0.64841	-0.3485	2.82472
MS*Running*Les	0	1	0	9	2.48148	2.98194	0.99398	0.1893	4.77361
MS*Running*Les	0	1	1	8	1.10416	1.22454	0.43294	0.0804	2.12790
MS*Running*Les	1	0	0	7	2.71430	4.45214	1.68275	-1.4032	6.83185
MS*Running*Les	1	0	1	6	5.13889	4.17988	1.70643	0.7523	9.52541
MS*Running*Les	1	1	0	8	2.60416	3.94096	1.39334	-0.6905	5.89889
MS*Running*Les	1	1	1	8	0.52083	1.15276	0.40756	-0.4429	1.48456

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Inner Zone frequency Mean	3. Inner Zone frequency Std.Dev.	3. Inner Zone frequency Std.Err	3. Inner Zone frequency -95.00%	3. Inner Zone frequency +95.00%
Total				61	1.49180	1.80391	0.23096	1.02980	1.95380
MS	0			32	1.21875	1.51836	0.26841	0.67132	1.76618
MS	1			29	1.79310	2.05946	0.38243	1.00972	2.57648
Running	0			28	1.82142	2.01941	0.38163	1.03838	2.60447
Running	1			33	1.21212	1.57634	0.27440	0.65317	1.77106
Lesion	0			32	1.62500	2.05959	0.36408	0.88243	2.36756
Lesion	1			29	1.34482	1.49465	0.27755	0.77629	1.91336
MS*Running	0	0		15	1.20000	1.56752	0.40473	0.33193	2.06806
MS*Running	0	1		17	1.23529	1.52189	0.36911	0.45280	2.01778
MS*Running	1	0		13	2.53846	2.29548	0.63665	1.15131	3.92560
MS*Running	1	1		16	1.18750	1.68201	0.42050	0.29121	2.08378
MS*Lesion	0	0		17	1.35294	1.72992	0.41956	0.46349	2.24238
MS*Lesion	0	1		15	1.06666	1.27988	0.33046	0.35789	1.77544
MS*Lesion	1	0		15	1.93333	2.40436	0.62080	0.60184	3.26482
MS*Lesion	1	1		14	1.64285	1.69193	0.45218	0.66596	2.61975
Running*Lesion	0	0		15	1.60000	2.26147	0.58391	0.34763	2.85236
Running*Lesion	0	1		13	2.07692	1.75411	0.48650	1.01692	3.13692
Running*Lesion	1	0		17	1.64705	1.93459	0.46920	0.65238	2.64173
Running*Lesion	1	1		16	0.75000	0.93094	0.23273	0.25393	1.24606
MS*Running*Les	0	0	0	8	1.25000	1.66904	0.59009	-0.14535	2.64535
MS*Running*Les	0	0	1	7	1.14285	1.57359	0.59476	-0.31247	2.59818
MS*Running*Les	0	1	0	9	1.44444	1.87823	0.62607	0.00070	2.88818
MS*Running*Les	0	1	1	8	1.00000	1.06904	0.37796	0.10625	1.89374
MS*Running*Les	1	0	0	7	2.00000	2.88675	1.09108	-0.66980	4.66980
MS*Running*Les	1	0	1	6	3.16666	1.32916	0.54262	1.77179	4.56153
MS*Running*Les	1	1	0	8	1.87500	2.10017	0.74252	0.11921	3.63078
MS*Running*Les	1	1	1	8	0.50000	0.75592	0.26726	-0.13197	1.13197

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level o Factor	Level of Factor	Level of Factor	N	3. Velocity max (cm/s) Mean	3. Velocity max (cm/s) Std.Dev.	3. Velocity max (cm/s) Std.Err	3. Velocity max (cm/s) -95.00%	3. Velocity max (cm/s) +95.00%
Total				61	65.1866	21.2514	2.7209	59.7439	70.6293
MS	0			32	63.3133	20.4115	3.6082	55.9542	70.6725
MS	1			29	67.2536	22.3172	4.1442	58.7646	75.7427
Running	0			28	67.3195	22.7359	4.2966	58.5034	76.1356
Running	1			33	63.3768	20.0818	3.4958	56.2561	70.4976
Lesion	0			32	64.1201	22.6140	3.9976	55.9669	72.2734
Lesion	1			29	66.3634	19.9710	3.7085	58.7668	73.9600
MS*Running	0	0		15	62.6232	23.0301	5.9463	49.8696	75.3769
MS*Running	0	1		17	63.9223	18.5011	4.4871	54.4099	73.4347
MS*Running	1	0		13	72.7383	22.0207	6.1074	59.4313	86.0453
MS*Running	1	1		16	62.7973	22.2378	5.5594	50.9476	74.6471
MS*Lesion	0	0		17	61.8925	18.8145	4.5632	52.2189	71.5661
MS*Lesion	0	1		15	64.9236	22.6440	5.8466	52.3838	77.4635
MS*Lesion	1	0		15	66.6448	26.7387	6.9039	51.8374	81.4522
MS*Lesion	1	1		14	67.9060	17.3752	4.6437	57.8738	77.9382
Running*Lesion	0	0		15	66.9003	20.5451	5.3047	55.5227	78.2778
Running*Lesion	0	1		13	67.8033	25.8872	7.1798	52.1597	83.4468
Running*Lesion	1	0		17	61.6671	24.6544	5.9795	48.9909	74.3432
Running*Lesion	1	1		16	65.1935	14.3223	3.5805	57.5616	72.8253
MS*Running*Les	0	0	0	8	66.1187	10.9134	3.8584	56.9948	75.2426
MS*Running*Les	0	0	1	7	58.6284	32.6145	12.3271	28.4650	88.7918
MS*Running*Les	0	1	0	9	58.1359	23.8751	7.9584	39.7838	76.4880
MS*Running*Les	0	1	1	8	70.4319	6.2808	2.2206	65.1810	75.6828
MS*Running*Les	1	0	0	7	67.7935	29.0552	10.9818	40.9219	94.6652
MS*Running*Les	1	0	1	6	78.5072	8.7506	3.5724	69.3240	87.6905
MS*Running*Les	1	1	0	8	65.6396	26.5298	9.3797	43.4601	87.8191
MS*Running*Les	1	1	1	8	59.9551	18.3682	6.4941	44.5988	75.3113

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Velocity mean (cm/s) Mean	3. Velocity mean (cm/s) Std.Dev.	3. Velocity mean (cm/s) Std.Err	3. Velocity mean (cm/s) -95.00%	3. Velocity mean (cm/s) +95.00%
Total				61	10.4934	5.27626	0.67555	9.1421	11.8447
MS	0			32	10.1770	5.07932	0.89790	8.3457	12.0083
MS	1			29	10.8426	5.55431	1.03141	8.7298	12.9553
Running	0			28	11.7094	6.00281	1.13442	9.3817	14.0370
Running	1			33	9.4617	4.40487	0.76679	7.8998	11.0236
Lesion	0			32	10.3089	5.61916	0.99333	8.2830	12.3349
Lesion	1			29	10.6970	4.96134	0.92129	8.8098	12.5842
MS*Running	0	0		15	10.5390	5.53365	1.42878	7.4745	13.6034
MS*Running	0	1		17	9.8576	4.79183	1.16219	7.3938	12.3213
MS*Running	1	0		13	13.0599	6.45470	1.79021	9.1593	16.9604
MS*Running	1	1		16	9.0410	4.06621	1.01655	6.8743	11.2078
MS*Lesion	0	0		17	10.6390	5.62515	1.36430	7.7468	13.5311
MS*Lesion	0	1		15	9.6534	4.51795	1.16653	7.1514	12.1554
MS*Lesion	1	0		15	9.9349	5.78544	1.49379	6.7310	13.1388
MS*Lesion	1	1		14	11.8151	5.33214	1.42507	8.7364	14.8938
Running*Lesion	0	0		15	11.4508	6.15878	1.59019	8.0402	14.8614
Running*Lesion	0	1		13	12.0078	6.05340	1.67891	8.3497	15.6658
Running*Lesion	1	0		17	9.3014	5.06817	1.22921	6.6956	11.9072
Running*Lesion	1	1		16	9.6320	3.73283	0.93320	7.6429	11.6210
MS*Running*Les	0	0	0	8	11.8597	5.39056	1.90585	7.3531	16.3663
MS*Running*Les	0	0	1	7	9.0296	5.70655	2.15687	3.7519	14.3072
MS*Running*Les	0	1	0	9	9.5538	5.91979	1.97326	5.0035	14.1042
MS*Running*Les	0	1	1	8	10.1992	3.49019	1.23397	7.2814	13.1171
MS*Running*Les	1	0	0	7	10.9835	7.35703	2.78069	4.1794	17.7876
MS*Running*Les	1	0	1	6	15.4823	4.68642	1.91322	10.5642	20.4004
MS*Running*Les	1	1	0	8	9.0174	4.29970	1.52017	5.4228	12.6121
MS*Running*Les	1	1	1	8	9.0647	4.11601	1.45523	5.6236	12.5057

A5.1.4.2.3.3.2. Open Field P63 1 min intervals 3rd interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 3. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1706037	1	1706037	249.953	0.00000
MS	3585	1	3585	0.525	0.47176
Running	21304	1	21304	3.121	0.08303
Lesion	1310	1	1310	0.192	0.66300
MS*Running	12347	1	12347	1.809	0.18434
MS*Lesion	10649	1	10649	1.560	0.21710
Running*Lesion	223	1	223	0.032	0.85695
MS*Running*Lesion	14772	1	14772	2.164	0.14716
Error	361747	53	6825		

A5.1.4.2.3.3.3. Open Field P63 1 min intervals 3rd interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 3. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	343.549	1	343.549	30.0954	0.00000
MS	7.594	1	7.594	0.6652	0.41835
Running	30.476	1	30.476	2.6698	0.10819
Lesion	9.097	1	9.097	0.7969	0.37604
MS*Running	13.316	1	13.316	1.1665	0.28500
MS*Lesion	13.527	1	13.527	1.1850	0.28125
Running*Lesion	13.655	1	13.655	1.1962	0.27902
MS*Running*Lesion	25.474	1	25.474	2.2316	0.14114
Error	605.013	53	11.415		

A5.1.4.2.3.3.4. Open Field P63 1 min intervals 3rd interval Inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 3. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	144.090	1	144.090	46.4842	0.00000
MS	6.877	1	6.877	2.2185	0.14228
Running	7.059	1	7.059	2.2775	0.13720
Lesion	0.543	1	0.543	0.1751	0.67724
MS*Running	7.601	1	7.601	2.4522	0.12330
MS*Lesion	0.110	1	0.110	0.0357	0.85077
Running*Lesion	7.793	1	7.793	2.5142	0.11877
MS*Running*Lesion	4.569	1	4.569	1.4740	0.23009
Error	164.287	53	3.099		

A5.1.4.2.3.3.5. Open Field P63 1 min intervals 3rd interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	259377.	1	259377.	554.561	0.00000
MS	324.6	1	324.6	0.694	0.40852
Running	268.1	1	268.1	0.573	0.45234
Lesion	91.0	1	91.0	0.194	0.66102
MS*Running	565.7	1	565.7	1.209	0.27642
MS*Lesion	0.0	1	0.0	0.000	0.99204
Running*Lesion	10.8	1	10.8	0.023	0.87983
MS*Running*Lesion	1231.2	1	1231.2	2.632	0.11064
Error	24789.0	53	467.7		

A5.1.4.2.3.3.6. Open Field P63 1 min intervals 3rd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	6824.15	1	6824.15	249.953	0.00000
MS	14.342	1	14.342	0.525	0.47176
Running	85.218	1	85.218	3.121	0.08303
Lesion	5.243	1	5.243	0.192	0.66300
MS*Running	49.391	1	49.391	1.809	0.18434
MS*Lesion	42.599	1	42.599	1.560	0.21710
Running*Lesion	0.896	1	0.896	0.032	0.85695
MS*Running*Lesion	59.088	1	59.088	2.164	0.14716
Error	1446.99	53	27.302		

A5.1.4.2.3.4.1. Open Field P63 1min time-bins 4th interval Descriptive Statistics

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	4. Distance moved (cm) Mean	4. Distance moved (cm) Std.Dev.	4. Distance moved (cm) Std.Err	4. Distance moved (cm) -95.00%	4. Distance moved (cm) +95.00%
Total				61	501.150	221.718	28.388	444.365	557.935
MS	0			32	477.918	234.987	41.540	393.196	562.640
MS	1			29	526.785	207.142	38.465	447.992	605.578
Running	0			28	503.152	256.501	48.474	403.691	602.612
Running	1			33	499.451	191.453	33.327	431.565	567.338
Lesion	0			32	501.231	216.386	38.252	423.215	579.247
Lesion	1			29	501.060	231.302	42.951	413.077	589.043
MS*Running	0	0		15	464.931	278.543	71.919	310.679	619.183
MS*Running	0	1		17	489.378	196.980	47.774	388.099	590.656
MS*Running	1	0		13	547.252	231.480	64.201	407.370	687.135
MS*Running	1	1		16	510.155	191.234	47.808	408.253	612.056
MS*Lesion	0	0		17	490.412	211.122	51.204	381.863	598.962
MS*Lesion	0	1		15	463.758	266.320	68.763	316.275	611.241
MS*Lesion	1	0		15	513.492	228.990	59.125	386.682	640.303
MS*Lesion	1	1		14	541.026	188.480	50.373	432.201	649.852
Running*Lesion	0	0		15	510.082	247.438	63.888	373.055	647.109
Running*Lesion	0	1		13	495.155	276.539	76.698	328.044	662.266
Running*Lesion	1	0		17	493.421	192.377	46.658	394.510	592.333
Running*Lesion	1	1		16	505.858	196.556	49.139	401.120	610.596
MS*Running*Les	0	0	0	8	515.306	244.639	86.493	310.783	719.830
MS*Running*Les	0	0	1	7	407.359	322.429	121.867	109.161	705.557
MS*Running*Les	0	1	0	9	468.285	188.699	62.899	323.237	613.332
MS*Running*Les	0	1	1	8	513.107	216.284	76.468	332.288	693.926
MS*Running*Les	1	0	0	7	504.112	270.110	102.092	254.302	753.922
MS*Running*Les	1	0	1	6	597.583	188.158	76.815	400.123	795.043
MS*Running*Les	1	1	0	8	521.700	205.357	72.604	350.017	693.383
MS*Running*Les	1	1	1	8	498.609	189.443	66.978	340.230	656.988

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Inner zone duration (s) Mean	4. Inner zone duration (s) Std.Dev.	4. Inner zone duration (s) Std.Err	4. Inner zone duration (s) -95.00%	4. Inner zone duration (s) +95.00%
Total				61	2.47814	3.10382	0.39740	1.6832	3.27307
MS	0			32	2.51563	3.20514	0.56659	1.3600	3.67121
MS	1			29	2.43678	3.04412	0.56527	1.2788	3.59470
Running	0			28	2.55952	2.96243	0.55984	1.4108	3.70823
Running	1			33	2.40909	3.26308	0.56803	1.2520	3.56613
Lesion	0			32	3.04166	3.21955	0.56914	1.8808	4.20243
Lesion	1			29	1.85632	2.89899	0.53833	0.7536	2.95904
MS*Running	0	0		15	2.44445	3.23892	0.83628	0.6507	4.23810
MS*Running	0	1		17	2.57843	3.27347	0.79393	0.8953	4.26150
MS*Running	1	0		13	2.69229	2.73338	0.75810	1.0405	4.34406
MS*Running	1	1		16	2.22917	3.34934	0.83733	0.4444	4.01391
MS*Lesion	0	0		17	2.69608	3.17881	0.77097	1.0616	4.33047
MS*Lesion	0	1		15	2.31112	3.33384	0.86079	0.4649	4.15734
MS*Lesion	1	0		15	3.43332	3.33083	0.86001	1.5887	5.27788
MS*Lesion	1	1		14	1.36904	2.37433	0.63456	-0.0018	2.73994
Running*Lesion	0	0		15	2.76665	2.97060	0.76700	1.1215	4.41172
Running*Lesion	0	1		13	2.32052	3.05537	0.84740	0.4741	4.16686
Running*Lesion	1	0		17	3.28431	3.49690	0.84812	1.4863	5.08226
Running*Lesion	1	1		16	1.47917	2.80732	0.70183	-0.0167	2.97508
MS*Running*Les	0	0	0	8	2.93750	3.38639	1.19727	0.1064	5.76859
MS*Running*Les	0	0	1	7	1.88096	3.22562	1.21917	-1.1022	4.86417
MS*Running*Les	0	1	0	9	2.48148	3.17261	1.05753	0.0427	4.92017
MS*Running*Les	0	1	1	8	2.68750	3.60053	1.27298	-0.3226	5.69762
MS*Running*Les	1	0	0	7	2.57141	2.66986	1.00911	0.1022	5.04062
MS*Running*Les	1	0	1	6	2.83333	3.05501	1.24720	-0.3727	6.03938
MS*Running*Les	1	1	0	8	4.18750	3.83224	1.35490	0.9836	7.39134
MS*Running*Les	1	1	1	8	0.27083	0.76603	0.27083	-0.3695	0.91125

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	4. Inner Zone frequency Mean	4. Inner Zone frequency Std.Dev.	4. Inner Zone frequency Std.Err	4. Inner Zone frequency -95.00%	4. Inner Zone frequency +95.00%
Total				61	1.42623	1.68779	0.21609	0.99396	1.85849
MS	0			32	1.50000	1.88371	0.33299	0.82084	2.17915
MS	1			29	1.34482	1.47056	0.27307	0.78545	1.90420
Running	0			28	1.53571	1.55115	0.29314	0.93423	2.13719
Running	1			33	1.33333	1.81429	0.31582	0.69001	1.97665
Lesion	0			32	1.65625	1.63843	0.28963	1.06553	2.24697
Lesion	1			29	1.17241	1.73347	0.32189	0.51303	1.83179
MS*Running	0	0		15	1.40000	1.68183	0.43424	0.46863	2.33137
MS*Running	0	1		17	1.58823	2.09340	0.50772	0.51190	2.66456
MS*Running	1	0		13	1.69230	1.43669	0.39846	0.82411	2.56049
MS*Running	1	1		16	1.06250	1.48183	0.37045	0.27288	1.85211
MS*Lesion	0	0		17	1.47058	1.69991	0.41229	0.59657	2.34460
MS*Lesion	0	1		15	1.53333	2.13363	0.55090	0.35176	2.71489
MS*Lesion	1	0		15	1.86666	1.59761	0.41250	0.98193	2.75139
MS*Lesion	1	1		14	0.78571	1.12171	0.29979	0.13805	1.43337
Running*Lesion	0	0		15	1.53333	1.55226	0.40079	0.67371	2.39294
Running*Lesion	0	1		13	1.53846	1.61324	0.44743	0.56358	2.51333
Running*Lesion	1	0		17	1.76470	1.75105	0.42469	0.86439	2.66501
Running*Lesion	1	1		16	0.87500	1.82117	0.45529	-0.09543	1.84543
MS*Running*Lesi	0	0	0	8	1.37500	1.50594	0.53243	0.11600	2.63399
MS*Running*Lesi	0	0	1	7	1.42857	1.98806	0.75141	-0.41007	3.26722
MS*Running*Lesi	0	1	0	9	1.55555	1.94365	0.64788	0.06153	3.04957
MS*Running*Lesi	0	1	1	8	1.62500	2.38671	0.84383	-0.37034	3.62034
MS*Running*Lesi	1	0	0	7	1.71428	1.70433	0.64417	0.13803	3.29053
MS*Running*Lesi	1	0	1	6	1.66666	1.21106	0.49441	0.39573	2.93759
MS*Running*Lesi	1	1	0	8	2.00000	1.60356	0.56694	0.65938	3.34061
MS*Running*Lesi	1	1	1	8	0.12500	0.35355	0.12500	-0.17057	0.42057

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Velocity max (cm/s) Mean	4. Velocity max (cm/s) Std.Dev.	4. Velocity max (cm/s) Std.Err	4. Velocity max (cm/s) -95.00%	4. Velocity max (cm/s) +95.00%
Total				61	65.1943	20.7946	2.66248	59.8685	70.5201
MS	0			32	63.1283	22.5067	3.97868	55.0138	71.2429
MS	1			29	67.4740	18.8552	3.50133	60.3018	74.6461
Running	0			28	63.4750	25.1853	4.75958	53.7092	73.2409
Running	1			33	66.6531	16.4563	2.86468	60.8179	72.4883
Lesion	0			32	64.9070	20.6403	3.64872	57.4653	72.3486
Lesion	1			29	65.5114	21.3247	3.95991	57.3999	73.6229
MS*Running	0	0		15	57.8146	27.8862	7.20021	42.3717	73.2575
MS*Running	0	1		17	67.8170	15.8487	3.84389	59.6683	75.9657
MS*Running	1	0		13	70.0063	20.8245	5.77568	57.4222	82.5904
MS*Running	1	1		16	65.4165	17.5110	4.37776	56.0855	74.7475
MS*Lesion	0	0		17	65.3798	16.3236	3.95906	56.9870	73.7726
MS*Lesion	0	1		15	60.5767	28.3549	7.32121	44.8743	76.2791
MS*Lesion	1	0		15	64.3711	25.2631	6.52293	50.3808	78.3614
MS*Lesion	1	1		14	70.7985	7.44318	1.98927	66.5010	75.0961
Running*Lesion	0	0		15	66.9512	22.3991	5.78345	54.5470	79.3555
Running*Lesion	0	1		13	59.4640	28.4481	7.89010	42.2729	76.6550
Running*Lesion	1	0		17	63.1032	19.4688	4.72188	53.0933	73.1131
Running*Lesion	1	1		16	70.4249	11.9988	2.99971	64.0312	76.8186
MS*Running*Les	0	0	0	8	66.5743	18.0623	6.38601	51.4738	81.6748
MS*Running*Les	0	0	1	7	47.8034	34.8517	13.1727	15.5709	80.0359
MS*Running*Les	0	1	0	9	64.3181	15.6447	5.21491	52.2924	76.3437
MS*Running*Les	0	1	1	8	71.7533	16.1543	5.71141	58.2480	85.2586
MS*Running*Les	1	0	0	7	67.3820	28.1008	10.6211	41.3931	93.3710
MS*Running*Les	1	0	1	6	73.0679	8.50323	3.47143	64.1443	81.9915
MS*Running*Les	1	1	0	8	61.7365	24.1372	8.53382	41.5572	81.9158
MS*Running*Les	1	1	1	8	69.0965	6.59665	2.33227	63.5815	74.6114

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Velocity mean (cm/s) Mean	4. Velocity mean (cm/s) Std.Dev.	4. Velocity mean (cm/s) Std.Err	4. Velocity mean (cm/s) -95.00%	4. Velocity mean (cm/s) +95.00%
Total				61	10.0230	4.43437	0.56776	8.88731	11.1587
MS	0			32	9.5583	4.69975	0.83080	7.86393	11.2528
MS	1			29	10.5357	4.14285	0.76930	8.95984	12.1115
Running	0			28	10.0630	5.13002	0.96948	8.07383	12.0522
Running	1			33	9.9890	3.82906	0.66655	8.63131	11.3467
Lesion	0			32	10.0246	4.32774	0.76504	8.46432	11.5849
Lesion	1			29	10.0212	4.62605	0.85903	8.26155	11.7808
MS*Running	0	0		15	9.2986	5.57086	1.43839	6.21359	12.3836
MS*Running	0	1		17	9.7875	3.93961	0.95549	7.76199	11.8131
MS*Running	1	0		13	10.9450	4.62961	1.28402	8.14740	13.7427
MS*Running	1	1		16	10.2031	3.82468	0.95617	8.16507	12.2411
MS*Lesion	0	0		17	9.8082	4.22245	1.02409	7.63727	11.9792
MS*Lesion	0	1		15	9.2751	5.32640	1.37527	6.32551	12.2248
MS*Lesion	1	0		15	10.2698	4.57981	1.18250	7.73364	12.8060
MS*Lesion	1	1		14	10.8205	3.76961	1.00747	8.64402	12.9970
Running*Lesion	0	0		15	10.2016	4.94878	1.27777	7.46111	12.9422
Running*Lesion	0	1		13	9.9031	5.53079	1.53396	6.56088	13.2453
Running*Lesion	1	0		17	9.8684	3.84755	0.93316	7.89021	11.8466
Running*Lesion	1	1		16	10.1171	3.93113	0.98278	8.02242	12.2119
MS*Running*Les	0	0	0	8	10.3061	4.89279	1.72986	6.21566	14.3966
MS*Running*Les	0	0	1	7	8.1472	6.44860	2.43734	2.18323	14.1111
MS*Running*Les	0	1	0	9	9.3657	3.77399	1.25799	6.46475	12.2666
MS*Running*Les	0	1	1	8	10.2621	4.32570	1.52936	6.64577	13.8785
MS*Running*Les	1	0	0	7	10.0822	5.40220	2.04184	5.08604	15.0784
MS*Running*Les	1	0	1	6	11.9516	3.76316	1.53630	8.00247	15.9008
MS*Running*Les	1	1	0	8	10.4340	4.10714	1.45209	7.00035	13.8676
MS*Running*Les	1	1	1	8	9.9721	3.78887	1.33956	6.80461	13.1397

A5.1.4.2.3.4.2. Open Field P63 1 min intervals 4th interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 4. Distance moved (cm) (P63 1 min tin Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1524148	1	1524148	286.838	0.00000
MS	4466	1	4466	0.840	0.36338
Running	483	1	483	0.009	0.92441
Lesion	49	1	49	0.000	0.97576
MS*Running	1845	1	1845	0.347	0.55809
MS*Lesion	1675	1	1675	0.315	0.57675
Running*Lesion	123	1	123	0.023	0.87951
MS*Running*Lesion	6820	1	6820	1.283	0.26231
Error	281621	53	5313		

A5.1.4.2.3.4.3. Open Field P63 1 min intervals 4th interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 4. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	370.519	1	370.519	38.4809	0.00000
MS	0.014	1	0.014	0.0015	0.96914
Running	0.333	1	0.333	0.0346	0.85298
Lesion	19.085	1	19.085	1.9821	0.16500
MS*Running	1.581	1	1.581	0.1642	0.68689
MS*Lesion	7.394	1	7.394	0.7679	0.38480
Running*Lesion	7.995	1	7.995	0.8304	0.36628
MS*Running*Lesion	27.838	1	27.838	2.8912	0.09492
Error	510.317	53	9.628		

A5.1.4.2.3.4.4. Open Field P63 1 min intervals 4th interval Inner zone frequency ANOVA

Effect	Univariate Tests of Significance for 4. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	124.140	1	124.140	42.9120	0.00000
MS	0.215	1	0.215	0.0743	0.78620
Running	0.726	1	0.726	0.2511	0.61836
Lesion	3.045	1	3.045	1.0526	0.30955
MS*Running	2.507	1	2.507	0.8667	0.35609
MS*Lesion	3.934	1	3.934	1.3601	0.24873
Running*Lesion	3.085	1	3.085	1.0666	0.30639
MS*Running*Lesion	3.194	1	3.194	1.1043	0.29808
Error	153.323	53	2.892		

A5.1.4.2.3.4.5. Open Field P63 1 min intervals 4th interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 4. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	255953.	1	255953.	593.970	0.00000
MS	408.1	1	408.1	0.947	0.33487
Running	137.1	1	137.1	0.318	0.57504
Lesion	2.8	1	2.8	0.006	0.93662
MS*Running	921.8	1	921.8	2.139	0.14948
MS*Lesion	559.0	1	559.0	1.297	0.25985
Running*Lesion	730.9	1	730.9	1.696	0.19842
MS*Running*Lesion	565.9	1	565.9	1.313	0.25696
Error	22838.	53	430.9		

A5.1.4.2.3.4.6. Open Field P63 1 min intervals 4th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 4. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	6096.59	1	6096.59	286.838	0.00000
MS	17.866	1	17.866	0.840	0.36338
Running	0.193	1	0.193	0.009	0.92441
Lesion	0.020	1	0.020	0.000	0.97576
MS*Running	7.384	1	7.384	0.347	0.55809
MS*Lesion	6.704	1	6.704	0.315	0.57675
Running*Lesion	0.493	1	0.493	0.023	0.87951
MS*Running*Lesion	27.284	1	27.284	1.283	0.26231
Error	1126.48	53	21.254		

A5.1.4.2.3.5.1. Open Field P63 1min time-bins 5th interval Descriptive Statistics

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Distance moved (cm) Mean	5. Distance moved (cm) Std.Dev.	5. Distance moved (cm) Std.Err	5. Distance moved (cm) -95.00%	5. Distance moved (cm) +95.00%
Total				61	455.048	252.879	32.377	390.283	519.814
MS	0			32	495.739	253.661	44.841	404.285	587.194
MS	1			29	410.148	248.621	46.167	315.577	504.718
Running	0			28	488.297	245.901	46.471	392.946	583.647
Running	1			33	426.838	259.026	45.090	334.991	518.684
Lesion	0			32	483.907	259.033	45.791	390.515	577.298
Lesion	1			29	423.205	246.458	45.766	329.457	516.952
MS*Running	0	0		15	551.218	269.440	69.569	402.007	700.430
MS*Running	0	1		17	446.787	236.033	57.246	325.430	568.144
MS*Running	1	0		13	415.695	201.730	55.949	293.790	537.599
MS*Running	1	1		16	405.641	287.713	71.928	252.329	558.952
MS*Lesion	0	0		17	550.108	269.595	65.386	411.495	688.722
MS*Lesion	0	1		15	434.121	227.494	58.738	308.139	560.104
MS*Lesion	1	0		15	408.878	232.714	60.086	280.005	537.751
MS*Lesion	1	1		14	411.508	273.512	73.099	253.587	569.429
Running*Lesion	0	0		15	498.849	280.483	72.420	343.522	654.176
Running*Lesion	0	1		13	476.121	209.689	58.157	349.407	602.835
Running*Lesion	1	0		17	470.722	246.518	59.789	343.974	597.470
Running*Lesion	1	1		16	380.210	271.681	67.920	235.441	524.979
MS*Running*Les	0	0	0	8	614.303	299.928	106.040	363.557	865.050
MS*Running*Les	0	0	1	7	479.121	230.381	87.075	266.054	692.188
MS*Running*Les	0	1	0	9	493.046	242.626	80.875	306.547	679.545
MS*Running*Les	0	1	1	8	394.746	232.846	82.323	200.082	589.411
MS*Running*Les	1	0	0	7	366.901	201.323	76.093	180.708	553.094
MS*Running*Les	1	0	1	6	472.620	204.472	83.475	258.040	687.201
MS*Running*Les	1	1	0	8	445.608	265.080	93.719	223.995	667.220
MS*Running*Les	1	1	1	8	365.674	321.659	113.724	96.759	634.588

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Inner zone duration (s) Mean	5. Inner zone duration (s) Std.Dev.	5. Inner zone duration (s) Std.Err	5. Inner zone duration (s) -95.00%	5. Inner zone duration (s) +95.00%
Total				61	3.44261	5.1259	0.65631	2.1297	4.7554
MS	0			32	4.49478	6.3132	1.11604	2.2186	6.7709
MS	1			29	2.28160	3.0848	0.57283	1.1082	3.4550
Running	0			28	3.02975	3.4375	0.64964	1.6968	4.3627
Running	1			33	3.79293	6.2466	1.08740	1.5779	6.0079
Lesion	0			32	4.20312	5.8249	1.02970	2.1030	6.3032
Lesion	1			29	2.60344	4.1653	0.77348	1.0190	4.1878
MS*Running	0	0		15	3.61110	3.0852	0.79659	1.9025	5.3196
MS*Running	0	1		17	5.27451	8.2168	1.99288	1.0497	9.4992
MS*Running	1	0		13	2.35896	3.8175	1.05878	0.0520	4.6658
MS*Running	1	1		16	2.21875	2.4688	0.61721	0.9032	3.5343
MS*Lesion	0	0		17	5.61764	7.4755	1.81309	1.7740	9.4612
MS*Lesion	0	1		15	3.22221	4.5958	1.18664	0.6771	5.7673
MS*Lesion	1	0		15	2.59999	2.4654	0.63658	1.2346	3.9653
MS*Lesion	1	1		14	1.94047	3.7023	0.98950	-0.1972	4.0781
Running*Lesion	0	0		15	3.12222	2.9381	0.75862	1.4951	4.7493
Running*Lesion	0	1		13	2.92305	4.0612	1.12637	0.4688	5.3772
Running*Lesion	1	0		17	5.15685	7.4915	1.81696	1.3050	9.0086
Running*Lesion	1	1		16	2.34375	4.3625	1.09062	0.0191	4.6683
MS*Running*Les	0	0	0	8	4.77083	2.9099	1.02881	2.3380	7.2036
MS*Running*Les	0	0	1	7	2.28569	2.9134	1.10116	-0.4087	4.9801
MS*Running*Les	0	1	0	9	6.37037	10.1491	3.38304	-1.4309	14.1716
MS*Running*Les	0	1	1	8	4.04166	5.7726	2.04094	-0.7843	8.8677
MS*Running*Les	1	0	0	7	1.23809	1.5807	0.59745	-0.2238	2.7000
MS*Running*Les	1	0	1	6	3.66665	5.3072	2.16666	-1.9029	9.2362
MS*Running*Les	1	1	0	8	3.79165	2.5568	0.90399	1.6540	5.9292
MS*Running*Les	1	1	1	8	0.64584	0.9319	0.32950	-0.1333	1.4249

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Inner Zone frequency Mean	5. Inner Zone frequency Std.Dev.	5. Inner Zone frequency Std.Err	5. Inner Zone frequency -95.00%	5. Inner Zone frequency +95.00%
Total				61	1.59016	1.82004	0.23303	1.12402	2.05629
MS	0			32	1.81250	1.97463	0.34907	1.10056	2.52443
MS	1			29	1.34482	1.63173	0.30300	0.72414	1.96550
Running	0			28	1.78571	1.91208	0.36135	1.04428	2.52714
Running	1			33	1.42424	1.75054	0.30473	0.80352	2.04495
Lesion	0			32	1.78125	1.84451	0.32606	1.11623	2.44626
Lesion	1			29	1.37931	1.80106	0.33445	0.69422	2.06440
MS*Running	0	0		15	2.13333	1.92230	0.49633	1.06879	3.19786
MS*Running	0	1		17	1.52941	2.03462	0.49346	0.48330	2.57552
MS*Running	1	0		13	1.38461	1.89466	0.52548	0.23968	2.52954
MS*Running	1	1		16	1.31250	1.44769	0.36192	0.54107	2.08392
MS*Lesion	0	0		17	2.05882	2.10566	0.51069	0.97619	3.14145
MS*Lesion	0	1		15	1.53333	1.84649	0.47676	0.51078	2.55588
MS*Lesion	1	0		15	1.46666	1.50554	0.38873	0.63292	2.30041
MS*Lesion	1	1		14	1.21428	1.80506	0.48242	0.17207	2.25649
Running*Lesion	0	0		15	1.86666	1.84649	0.47676	0.84411	2.88921
Running*Lesion	0	1		13	1.69230	2.05688	0.57047	0.44934	2.93527
Running*Lesion	1	0		17	1.70588	1.89620	0.45989	0.73094	2.68082
Running*Lesion	1	1		16	1.12500	1.58640	0.39660	0.27966	1.97033
MS*Running*Les	0	0	0	8	2.75000	1.90862	0.67480	1.15434	4.34565
MS*Running*Les	0	0	1	7	1.42857	1.81265	0.68511	-0.24785	3.10499
MS*Running*Les	0	1	0	9	1.44444	2.18581	0.72860	-0.23572	3.12460
MS*Running*Les	0	1	1	8	1.62500	1.99553	0.70552	-0.04330	3.29330
MS*Running*Les	1	0	0	7	0.85714	1.21498	0.45922	-0.26653	1.98081
MS*Running*Les	1	0	1	6	2.00000	2.44949	1.00000	-0.57058	4.57058
MS*Running*Les	1	1	0	8	2.00000	1.60356	0.56694	0.65938	3.34061
MS*Running*Les	1	1	1	8	0.62500	0.91612	0.32389	-0.14090	1.39090

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Velocity max (cm/s) Mean	5. Velocity max (cm/s) Std.Dev.	5. Velocity max (cm/s) Std.Err	5. Velocity max (cm/s) -95.00%	5. Velocity max (cm/s) +95.00
Total				61	57.0254	25.5093	3.2661	50.4921	63.558
MS	0			32	59.9219	23.7979	4.2069	51.3418	68.502
MS	1			29	53.8292	27.3353	5.0760	43.4314	64.227
Running	0			28	61.3504	25.3986	4.7999	51.5018	71.199
Running	1			33	53.3556	25.4078	4.4229	44.3464	62.364
Lesion	0			32	59.4516	24.7411	4.3736	50.5315	68.371
Lesion	1			29	54.3482	26.5057	4.9219	44.2660	64.430
MS*Running	0	0		15	63.8476	24.8567	6.4179	50.0824	77.612
MS*Running	0	1		17	56.4580	23.0102	5.5807	44.6273	68.288
MS*Running	1	0		13	58.4690	26.7177	7.4101	42.3237	74.614
MS*Running	1	1		16	50.0594	28.1055	7.0263	35.0829	65.035
MS*Lesion	0	0		17	62.8726	21.6191	5.2434	51.7571	73.988
MS*Lesion	0	1		15	56.5778	26.4071	6.8182	41.9540	71.201
MS*Lesion	1	0		15	55.5744	28.1236	7.2615	40.0001	71.148
MS*Lesion	1	1		14	51.9593	27.3922	7.3208	36.1435	67.775
Running*Lesion	0	0		15	60.8668	27.3737	7.0678	45.7077	76.025
Running*Lesion	0	1		13	61.9084	24.0129	6.6600	47.3975	76.419
Running*Lesion	1	0		17	58.2028	22.9520	5.5667	46.4020	70.003
Running*Lesion	1	1		16	48.2055	27.5744	6.8936	33.5121	62.898
MS*Running*Les	0	0	0	8	65.2659	25.1125	8.8786	44.2713	86.260
MS*Running*Les	0	0	1	7	62.2267	26.4607	10.0012	37.7546	86.698
MS*Running*Les	0	1	0	9	60.7452	19.2910	6.4303	45.9168	75.573
MS*Running*Les	0	1	1	8	51.6350	27.1051	9.5831	28.9745	74.295
MS*Running*Les	1	0	0	7	55.8392	30.9414	11.6947	27.2232	84.455
MS*Running*Les	1	0	1	6	61.5371	23.3105	9.5164	37.0742	86.000
MS*Running*Les	1	1	0	8	55.3427	27.5888	9.7541	32.2779	78.407
MS*Running*Les	1	1	1	8	44.7760	29.4575	10.4148	20.1489	69.403

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Velocity mean (cm/s) Mean	5. Velocity mean (cm/s) Std.Dev.	5. Velocity mean (cm/s) Std.Err	5. Velocity mean (cm/s) -95.00%	5. Velocity mean (cm/s) +95.00%
Total				61	9.1009	5.05758	0.64755	7.80567	10.3962
MS	0			32	9.9148	5.07323	0.89682	8.08570	11.7439
MS	1			29	8.2029	4.97242	0.92335	6.31155	10.0943
Running	0			28	9.7659	4.91803	0.92942	7.85893	11.6729
Running	1			33	8.5367	5.18052	0.90181	6.69982	10.3737
Lesion	0			32	9.6781	5.18066	0.91582	7.81031	11.5459
Lesion	1			29	8.4641	4.92917	0.91532	6.58914	10.3390
MS*Running	0	0		15	11.0243	5.38881	1.39138	8.04015	14.0086
MS*Running	0	1		17	8.9357	4.72066	1.14493	6.50861	11.3629
MS*Running	1	0		13	8.3139	4.03460	1.11899	5.87581	10.7519
MS*Running	1	1		16	8.1128	5.75427	1.43856	5.04659	11.1790
MS*Lesion	0	0		17	11.0021	5.39191	1.30773	8.22991	13.7744
MS*Lesion	0	1		15	8.6824	4.54989	1.17477	6.16279	11.2020
MS*Lesion	1	0		15	8.1775	4.65429	1.20173	5.60010	10.7550
MS*Lesion	1	1		14	8.2301	5.47024	1.46198	5.07175	11.3886
Running*Lesion	0	0		15	9.9769	5.60967	1.44841	6.87046	13.0835
Running*Lesion	0	1		13	9.5224	4.19378	1.16314	6.98815	12.0567
Running*Lesion	1	0		17	9.4144	4.93037	1.19579	6.87949	11.9494
Running*Lesion	1	1		16	7.6042	5.43362	1.35840	4.70884	10.4995
MS*Running*Les	0	0	0	8	12.2860	5.99856	2.12081	7.27115	17.3010
MS*Running*Les	0	0	1	7	9.5824	4.60762	1.74151	5.32109	13.8437
MS*Running*Les	0	1	0	9	9.8609	4.85252	1.61750	6.13095	13.5909
MS*Running*Les	0	1	1	8	7.8949	4.65693	1.64647	4.00164	11.7882
MS*Running*Les	1	0	0	7	7.3380	4.02647	1.52186	3.61416	11.0619
MS*Running*Les	1	0	1	6	9.4524	4.08944	1.66950	5.16081	13.7440
MS*Running*Les	1	1	0	8	8.9121	5.30160	1.87439	4.47991	13.3444
MS*Running*Les	1	1	1	8	7.3134	6.43320	2.27448	1.93519	12.6917

A5.1.4.2.3.5.2. Open Field P63 1 min intervals 5th Interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 5. Distance moved (cm) (P63 1 min timebins sprea Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1240403	1	1240403	189.622	0.00000
MS	10265	1	10265	1.5693	0.21580
Running	51431	1	51431	0.7862	0.37924
Lesion	40562	1	40562	0.6201	0.43452
MS*Running	2958	1	2958	0.4523	0.50415
MS*Lesion	6320	1	6320	0.9662	0.33008
Running*Lesion	20811	1	20811	0.3181	0.57510
MS*Running*Lesion	4656	1	4656	0.7119	0.40262
Error	346697	53	6541		

A5.1.4.2.3.5.3. Open Field P63 1 min intervals 5th interval Inner Zone duration ANOVA

Univariate Tests of Significance for 5. Inner zone duration (s) (P63 1 min timebins sprea Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	675.905	1	675.904	26.04973	0.00000
MS	62.094	1	62.0945	2.39315	0.12781
Running	7.844	1	7.8441	0.30231	0.58474
Lesion	28.767	1	28.766	1.10868	0.29714
MS*Running	13.741	1	13.741	0.52959	0.46998
MS*Lesion	15.780	1	15.780	0.60818	0.43894
Running*Lesion	27.601	1	27.601	1.06377	0.30704
MS*Running*Lesion	30.881	1	30.881	1.19019	0.28022
Error	1375.176	53	25.9467		

A5.1.4.2.3.5.4. Open Field P63 1 min intervals 5th interval Inner Zone Frequency ANOVA

Univariate Tests of Significance for 5. Inner Zone frequency (P63 1 min timebins sprea Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	152.381	1	152.381	46.4035	0.00000
MS	2.9321	1	2.9321	0.8929	0.34898
Running	1.6916	1	1.6916	0.5151	0.47607
Lesion	1.7726	1	1.7726	0.5398	0.46575
MS*Running	0.7232	1	0.7232	0.2202	0.64079
MS*Lesion	0.7765	1	0.7765	0.2364	0.62878
Running*Lesion	0.9704	1	0.9704	0.2955	0.58899
MS*Running*Lesion	15.194	1	15.194	4.6270	0.03605
Error	174.043	53	3.2838		

A5.1.4.2.3.5.5. Open Field P63 1 min intervals 5th Interval Inner zone frequency post hoc Newman Keuls test (MS*Running*Lesion)

Newman-Keuls test; variable 5. Inner Zone frequency (P63 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 3.2838, df = 53.000							
Cell No.	MS	Running	Lesion	{1} 2.7500	{2} 1.4286	{3} 1.4444	{4} 1.6250
1	0	0	0		0.71840	0.63218	0.62714
2	0	0	1	0.71840		0.98660	0.97601
3	0	1	0	0.63218	0.98660		0.84762
4	0	1	1	0.62714	0.97601	0.84762	
5	1	0	0	0.41131	0.54357	0.80522	0.84397
6	1	0	1	0.42589	0.97270	0.93336	0.91527
7	1	1	0	0.70310	0.92804	0.82370	0.68992
8	1	1	1	0.32679	0.66770	0.81678	0.82090

Cell No.	MS	Running	Lesion	{5} .85714	{6} 2.0000	{7} 2.0000	{8} .62500
Newman-Keuls test; variable 5. Inner Zone frequency (P63 1 min timebins spreads							
Approximate Probabilities for Post Hoc Tests							
Error: Between MS = 3.2838, df = 53.000							
1	0	0	0	0.41131	0.42589	0.70310	0.32679
2	0	0	1	0.54357	0.97270	0.92804	0.66770
3	0	1	0	0.80522	0.93336	0.82370	0.81678
4	0	1	1	0.84397	0.91527	0.68992	0.82090
5	1	0	0		0.82369	0.73811	0.80486
6	1	0	1	0.82369		1.00000	0.76002
7	1	1	0	0.73811	1.00000		0.68350
8	1	1	1	0.80486	0.76002	0.68350	

A5.1.4.2.3.5.6. Open Field P63 1 min intervals 5th interval Maximum Velocity ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 5. Velocity max (cm/s) (P63 1 min timebins spread					
Sigma-restricted parameterization					
Effective hypothesis decomposition					
Intercept	196697.0	1	196697.0	284.8432	0.00000
MS	470.9	1	470.9	0.6819	0.41264
Running	985.3	1	985.3	1.4268	0.23760
Lesion	272.3	1	272.3	0.3944	0.53270
MS*Running	4.3	1	4.3	0.0063	0.93720
MS*Lesion	49.8	1	49.8	0.0722	0.78923
Running*Lesion	469.1	1	469.1	0.6793	0.41351
MS*Running*Lesion	97.7	1	97.7	0.1415	0.70830
Error	36598.9	53	690.5		

A5.1.4.2.3.5.7. Open Field P63 1 min intervals 5th interval Mean Velocity ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 5. Velocity mean (cm/s) (P63 1 min timebins spread					
Sigma-restricted parameterization					
Effective hypothesis decomposition					
Intercept	4961.619	1	4961.619	189.622	0.00000
MS	41.062	1	41.062	1.5693	0.21580
Running	20.572	1	20.572	0.7862	0.37924
Lesion	16.225	1	16.225	0.6201	0.43452
MS*Running	11.836	1	11.836	0.4523	0.50415
MS*Lesion	25.283	1	25.283	0.9662	0.33008
Running*Lesion	8.325	1	8.325	0.3181	0.57510
MS*Running*Lesion	18.626	1	18.626	0.7119	0.40262
Error	1386.790	53	26.166		

A5.1.4.2.3.6.1. Open Field P63 1min time-bins 6th interval Descriptive Statistics

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	6. Distance moved (cm) Mean	6. Distance moved (cm) Std.Dev.	6. Distance moved (cm) Std.Err	6. Distance moved (cm) -95.00%	6. Distance moved (cm) +95.00%
Total				61	403.325	219.070	28.0491	347.219	459.432
MS	0			32	359.362	197.256	34.8703	288.243	430.480
MS	1			29	451.837	234.765	43.5948	362.537	541.137
Running	0			28	457.438	223.451	42.2282	370.793	544.083
Running	1			33	357.412	207.654	36.1479	283.781	431.043
Lesion	0			32	402.152	216.081	38.1981	324.247	480.058
Lesion	1			29	404.620	226.147	41.9946	318.598	490.642
MS*Running	0	0		15	396.147	198.187	51.1716	286.395	505.899
MS*Running	0	1		17	326.904	196.550	47.6703	225.848	427.961
MS*Running	1	0		13	528.158	237.497	65.8699	384.640	671.676
MS*Running	1	1		16	389.826	220.469	55.1174	272.346	507.306
MS*Lesion	0	0		17	417.937	199.331	48.3450	315.450	520.424
MS*Lesion	0	1		15	292.977	178.495	46.0873	194.130	391.824
MS*Lesion	1	0		15	384.263	239.443	61.8239	251.664	516.863
MS*Lesion	1	1		14	524.237	214.596	57.3534	400.333	648.142
Running*Lesion	0	0		15	435.809	231.394	59.7457	307.667	563.951
Running*Lesion	0	1		13	482.394	220.491	61.1533	349.152	615.636
Running*Lesion	1	0		17	372.455	203.997	49.4765	267.570	477.341
Running*Lesion	1	1		16	341.428	216.960	54.2401	225.818	457.038
MS*Running*Lesi	0	0	0	8	445.219	219.603	77.6415	261.626	628.812
MS*Running*Lesi	0	0	1	7	340.065	168.835	63.8138	183.918	496.212
MS*Running*Lesi	0	1	0	9	393.686	189.375	63.1250	248.119	539.252
MS*Running*Lesi	0	1	1	8	251.775	187.431	66.2670	95.079	408.472
MS*Running*Lesi	1	0	0	7	425.055	261.568	98.8637	183.144	666.965
MS*Running*Lesi	1	0	1	6	648.445	144.999	59.1956	496.278	800.612
MS*Running*Lesi	1	1	0	8	348.571	230.003	81.3186	156.283	540.859
MS*Running*Lesi	1	1	1	8	431.081	217.636	76.9461	249.133	613.030

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	6. Inner zone duration (s) Mean	6. Inner zone duration (s) Std.Dev.	6. Inner zone duration (s) Std.Err	6. Inner zone duration (s) -95.00%	6. Inner zone duration (s) +95.00%
Total				61	2.49180	4.76507	0.61010	1.2714	3.7122
MS	0			32	2.49999	4.89091	0.86460	0.7366	4.2633
MS	1			29	2.48276	4.70864	0.87437	0.6916	4.2738
Running	0			28	3.91072	6.36937	1.20369	1.4409	6.3805
Running	1			33	1.28787	2.25547	0.39262	0.4881	2.0876
Lesion	0			32	3.63020	6.01963	1.06413	1.4598	5.8005
Lesion	1			29	1.23564	2.32845	0.43238	0.3499	2.1213
MS*Running	0	0		15	3.78888	6.47536	1.67193	0.2029	7.3748
MS*Running	0	1		17	1.36274	2.59352	0.62902	0.0292	2.6962
MS*Running	1	0		13	4.05129	6.50547	1.80429	0.1200	7.9825
MS*Running	1	1		16	1.20832	1.91435	0.47858	0.1882	2.2284
MS*Lesion	0	0		17	3.97057	6.27030	1.52077	0.7466	7.1944
MS*Lesion	0	1		15	0.83334	1.55964	0.40269	-0.0303	1.6970
MS*Lesion	1	0		15	3.24444	5.91636	1.52760	-0.0319	6.5208
MS*Lesion	1	1		14	1.66667	2.94466	0.78699	-0.0335	3.3668
Running*Lesion	0	0		15	5.93332	7.87270	2.03272	1.5735	10.2930
Running*Lesion	0	1		13	1.57695	2.82076	0.78233	-0.1276	3.2815
Running*Lesion	1	0		17	1.59803	2.57190	0.62377	0.2756	2.9203
Running*Lesion	1	1		16	0.95832	1.89000	0.47250	-0.0487	1.9654
MS*Running*Les	0	0	0	8	6.37498	8.13271	2.87534	-0.4241	13.1741
MS*Running*Les	0	0	1	7	0.83335	1.25093	0.47280	-0.3235	1.9902
MS*Running*Les	0	1	0	9	1.83332	3.13688	1.04563	-0.5779	4.2445
MS*Running*Les	0	1	1	8	0.83333	1.87715	0.66367	-0.7360	2.4026
MS*Running*Les	1	0	0	7	5.42856	8.17904	3.09138	-2.1357	12.9929
MS*Running*Les	1	0	1	6	2.44448	3.94221	1.60940	-1.6926	6.5815
MS*Running*Les	1	1	0	8	1.33333	1.92930	0.68211	-0.2796	2.9462
MS*Running*Les	1	1	1	8	1.08332	2.02364	0.71546	-0.6084	2.7751

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	6. Inner Zone frequency Mean	6. Inner Zone frequency Std.Dev.	6. Inner Zone frequency Std.Err	6. Inner Zone frequency -95.00%	6. Inner Zone frequency +95.00%
Total				61	1.26229	1.66234	0.21284	0.83654	1.68804
MS	0			32	1.40625	1.88130	0.33257	0.72796	2.08453
MS	1			29	1.10344	1.39757	0.25952	0.57184	1.63505
Running	0			28	1.60714	1.54774	0.29249	1.00699	2.20729
Running	1			33	0.96969	1.72273	0.29988	0.35884	1.58055
Lesion	0			32	1.59375	1.81142	0.32021	0.94066	2.24683
Lesion	1			29	0.89655	1.42289	0.26422	0.35531	1.43779
MS*Running	0	0		15	1.73333	1.70991	0.44149	0.78641	2.68025
MS*Running	0	1		17	1.11764	2.02738	0.49171	0.07526	2.16003
MS*Running	1	0		13	1.46153	1.39136	0.38589	0.62074	2.30233
MS*Running	1	1		16	0.81250	1.37689	0.34422	0.07880	1.54619
MS*Lesion	0	0		17	2.05882	2.22122	0.53872	0.91677	3.20087
MS*Lesion	0	1		15	0.66666	1.04653	0.27021	0.08711	1.24621
MS*Lesion	1	0		15	1.06666	1.03279	0.26666	0.49472	1.63861
MS*Lesion	1	1		14	1.14285	1.74784	0.46713	0.13368	2.15203
Running*Lesion	0	0		15	2.00000	1.55838	0.40237	1.13699	2.86300
Running*Lesion	0	1		13	1.15384	1.46322	0.40582	0.26962	2.03806
Running*Lesion	1	0		17	1.23529	1.98524	0.48149	0.21457	2.25601
Running*Lesion	1	1		16	0.68750	1.40089	0.35022	-0.05898	1.43398
MS*Running*Les	0	0	0	8	2.50000	1.77281	0.62678	1.01789	3.98210
MS*Running*Les	0	0	1	7	0.85714	1.21498	0.45922	-0.26653	1.98081
MS*Running*Les	0	1	0	9	1.66666	2.59807	0.86602	-0.33039	3.66372
MS*Running*Les	0	1	1	8	0.50000	0.92582	0.32732	-0.27400	1.27400
MS*Running*Les	1	0	0	7	1.42857	1.13389	0.42857	0.37989	2.47724
MS*Running*Les	1	0	1	6	1.50000	1.76068	0.71879	-0.34772	3.34772
MS*Running*Les	1	1	0	8	0.75000	0.88640	0.31339	0.00894	1.49105
MS*Running*Les	1	1	1	8	0.87500	1.80772	0.63912	-0.63629	2.38629

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	6. Velocity max (cm/s) Mean	6. Velocity max (cm/s) Std.Dev.	6. Velocity max (cm/s) Std.Err	6. Velocity max (cm/s) -95.00%	6. Velocity max (cm/s) +95.00%
Total				61	59.5240	22.2748	2.8520	53.8192	65.2289
MS	0			32	58.8535	21.6057	3.8193	51.0639	66.6432
MS	1			29	60.2639	23.3519	4.3363	51.3813	69.1465
Running	0			28	61.1169	23.3991	4.4220	52.0437	70.1901
Running	1			33	58.1725	21.5462	3.7507	50.5325	65.8125
Lesion	0			32	58.7199	22.2734	3.9374	50.6895	66.7504
Lesion	1			29	60.4113	22.6362	4.2034	51.8010	69.0217
MS*Running	0	0		15	60.4916	22.6761	5.8549	47.9340	73.0493
MS*Running	0	1		17	57.4082	21.2078	5.1436	46.5041	68.3122
MS*Running	1	0		13	61.8384	25.1188	6.9667	46.6592	77.0176
MS*Running	1	1		16	58.9846	22.5668	5.6417	46.9596	71.0096
MS*Lesion	0	0		17	62.4146	17.9505	4.3536	53.1853	71.6439
MS*Lesion	0	1		15	54.8176	25.1503	6.4938	40.8898	68.7455
MS*Lesion	1	0		15	54.5326	26.3611	6.8064	39.9343	69.1309
MS*Lesion	1	1		14	66.4046	18.6452	4.9831	55.6391	77.1700
Running*Lesion	0	0		15	58.0150	27.2747	7.0423	42.9107	73.1193
Running*Lesion	0	1		13	64.6961	18.3877	5.0998	53.5845	75.8077
Running*Lesion	1	0		17	59.3419	17.5900	4.2662	50.2980	68.3859
Running*Lesion	1	1		16	56.9300	25.6349	6.4087	43.2700	70.5899
MS*Running*Les	0	0	0	8	59.9280	23.5560	8.3283	40.2346	79.6214
MS*Running*Les	0	0	1	7	61.1358	23.4848	8.8764	39.4159	82.8556
MS*Running*Les	0	1	0	9	64.6249	12.1340	4.0446	55.2979	73.9520
MS*Running*Les	0	1	1	8	49.2893	26.7859	9.4702	26.8957	71.6829
MS*Running*Les	1	0	0	7	55.8286	32.8324	12.4095	25.4636	86.1936
MS*Running*Les	1	0	1	6	68.8498	10.5437	4.3044	57.7848	79.9148
MS*Running*Les	1	1	0	8	53.3986	21.5104	7.6050	35.4154	71.3817
MS*Running*Les	1	1	1	8	64.5706	23.6062	8.3460	44.8353	84.3059

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	6. Velocity mean (cm/s) Mean	6. Velocity mean (cm/s) Std.Dev.	6. Velocity mean (cm/s) Std.Err	6. Velocity mean (cm/s) -95.00%	6. Velocity mean (cm/s) +95.00%
Total				61	8.0665	4.3814	0.5609	6.9443	9.1886
MS	0			32	7.1872	3.9451	0.6974	5.7648	8.6096
MS	1			29	9.0367	4.6953	0.8718	7.2507	10.8227
Running	0			28	9.1487	4.4690	0.8445	7.4158	10.8816
Running	1			33	7.1482	4.1530	0.7229	5.6756	8.6208
Lesion	0			32	8.0430	4.3216	0.7639	6.4849	9.6011
Lesion	1			29	8.0924	4.5229	0.8398	6.3719	9.8128
MS*Running	0	0		15	7.9229	3.9637	1.0234	5.7279	10.1180
MS*Running	0	1		17	6.5381	3.9310	0.9534	4.5169	8.5592
MS*Running	1	0		13	10.5631	4.7499	1.3173	7.6928	13.4335
MS*Running	1	1		16	7.7965	4.4093	1.1023	5.4469	10.1461
MS*Lesion	0	0		17	8.3587	3.9866	0.9669	6.3090	10.4084
MS*Lesion	0	1		15	5.8595	3.5699	0.9217	3.8826	7.8365
MS*Lesion	1	0		15	7.6852	4.7888	1.2364	5.0332	10.3372
MS*Lesion	1	1		14	10.4847	4.2919	1.1470	8.0066	12.9628
Running*Lesion	0	0		15	8.7161	4.6278	1.1949	6.1533	11.2790
Running*Lesion	0	1		13	9.6479	4.4098	1.2230	6.9830	12.3127
Running*Lesion	1	0		17	7.4491	4.0799	0.9895	5.3514	9.5468
Running*Lesion	1	1		16	6.8285	4.3392	1.0848	4.5163	9.1407
MS*Running*Les	0	0	0	8	8.9043	4.3920	1.5528	5.2325	12.5762
MS*Running*Les	0	0	1	7	6.8013	3.3767	1.2762	3.6783	9.9242
MS*Running*Les	0	1	0	9	7.8737	3.7875	1.2625	4.9623	10.7850
MS*Running*Les	0	1	1	8	5.0355	3.7486	1.3253	1.9015	8.1694
MS*Running*Les	1	0	0	7	8.5011	5.2313	1.9772	3.6628	13.3393
MS*Running*Les	1	0	1	6	12.9689	2.8999	1.1839	9.9255	16.0122
MS*Running*Les	1	1	0	8	6.9714	4.6000	1.6263	3.1256	10.8172
MS*Running*Les	1	1	1	8	8.6216	4.3527	1.5389	4.9826	12.2606

A5.1.4.2.3.6.2. Open Field P63 1 min intervals 6th interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 6. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1014018	1	1014018	237.912	0.00000
MS	16777	1	16777	3.936	0.05244
Running	17684	1	17684	4.149	0.04666
Lesion	325	1	325	0.076	0.78335
MS*Running	2230	1	2230	0.523	0.47258
MS*Lesion	28751	1	28751	6.745	0.01213
Running*Lesion	2967	1	2967	0.696	0.40782
MS*Running*Lesion	1019	1	1019	0.239	0.62681
Error	225893	53	4262		

A5.1.4.2.3.6.3. Open Field P63 1 min intervals 6th interval Distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 6. Distance moved (cm) (P63 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 42621., df = 53.000

Cell No.	Running	{1} 457.44	{2} 357.41
1	0		0.06492
2	1	0.06492	

A5.1.4.2.3.6.4. Open Field P63 1 min intervals 6th interval Distance travelled post hoc Newman Keuls test (MS*Lesion)

Newman-Keuls test; variable 6. Distance moved (cm) (P63 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 42621., df = 53.000

Cell No.	MS	Lesion	{1} 417.94	{2} 292.98	{3} 384.26	{4} 524.24
1	0	0		0.22730	0.65518	0.16205
2	0	1	0.22730		0.22870	0.01661
3	1	0	0.65518	0.22870		0.15823
4	1	1	0.16205	0.01661	0.15823	

A5.1.4.2.3.6.5. Open Field P63 1 min intervals 6th interval Inner zone duration ANOVA

Univariate Tests of Significance for 6. Inner zone duration (s) (P63 1 min t
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	382.33	1	382.339	18.2629	0.00008
MS	0.162	1	0.161	0.0077	0.93029
Running	93.994	1	93.993	4.4897	0.03880
Lesion	89.859	1	89.859	4.2922	0.04316
MS*Running	0.787	1	0.786	0.0375	0.84702
MS*Lesion	10.287	1	10.286	0.4913	0.48639
Running*Lesion	49.776	1	49.775	2.3776	0.12903
MS*Running*Lesion	3.072	1	3.072	0.1467	0.70319
Error	1109.57	53	20.935		

A5.1.4.2.3.6.6. Open Field P63 1 min intervals 6th interval Inner zone duration post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 6. Inner zone duration (s) (P63 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 20.935, df = 53.000

Cell No.	Running	{1} 3.9107	{2} 1.2879
1	0		0.03003
2	1	0.03003	

A5.1.4.2.3.6.7. Open Field P63 1 min intervals 6th interval Inner zone duration post hoc Newman Keuls test (Lesion effect)

Cell No.	Lesion	{1} 3.6302	{2} 1.2356
1	0		0.046306
2	1	0.046306	

Newman-Keuls test; variable 6. Inner zone duration (s) (P63 1 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 20.935, df = 53.000

A5.1.4.2.3.6.8. Open Field P63 1 min intervals 6th interval Inner Zone frequency ANOVA

Univariate Tests of Significance for 6. Inner Zone frequency (P63 1 min ti
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	95.490	1	95.4907	35.5292	0.00000
MS	0.885	1	0.8851	0.3293	0.56847
Running	5.848	1	5.8489	2.1762	0.14607
Lesion	6.420	1	6.4206	2.3889	0.12814
MS*Running	0.012	1	0.0120	0.0044	0.94691
MS*Lesion	8.496	1	8.4963	3.1612	0.08114
Running*Lesion	0.263	1	0.2638	0.0981	0.75524
MS*Running*Lesion	0.167	1	0.1679	0.0624	0.80357
Error	142.446	53	2.6876		

A5.1.4.2.3.6.9. Open Field P63 1 min intervals 6th interval Maximum Velocity ANOVA

Univariate Tests of Significance for 6. Velocity max (cm/s) (P63 1 min time
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	214507.	1	214507.	412.557	0.00000
MS	55.3	1	55.3	0.106	0.74559
Running	180.6	1	180.6	0.347	0.55812
Lesion	95.3	1	95.3	0.183	0.67035
MS*Running	0.2	1	0.2	0.000	0.98513
MS*Lesion	1380.8	1	1380.8	2.655	0.10910
Running*Lesion	318.1	1	318.1	0.611	0.43760
MS*Running*Lesion	203.0	1	203.0	0.390	0.53472
Error	27557.	53	519.9		

A5.1.4.2.3.6.10. Open Field P63 1 min intervals 6th interval Mean Velocity ANOVA

	Univariate Tests of Significance for 6. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4056.07	1	4056.07	237.912	0.00000
MS	67.11	1	67.11	3.936	0.05244
Running	70.73	1	70.73	4.149	0.04666
Lesion	1.302	1	1.302	0.076	0.78335
MS*Running	8.923	1	8.923	0.523	0.47258
MS*Lesion	115.00	1	115.00	6.745	0.01213
Running*Lesion	11.868	1	11.868	0.696	0.40782
MS*Running*Lesion	4.078	1	4.078	0.239	0.62681
Error	903.57	53	17.049		

A5.1.4.2.3.6.11. Open Field P63 1 min intervals 6th interval Mean velocity post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 6. Velocity mean (cm/s) (P63 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 17.049, df = 53.000		
Cell No.	Running	{1} 9.1488	{2} 7.1483
1	0		0.06492
2	1	0.06492	

A5.1.4.2.3.6.12. Open Field P63 1 min intervals 6th Interval Mean velocity post hoc Newman Keuls test (MS*Lesion)

	Newman-Keuls test; variable 6. Velocity mean (cm/s) (P63 1 min timebins spreads Approximate Probabilities for Post Hoc Tests Error: Between MS = 17.049, df = 53.000					
Cell No.	MS	Lesion	{1} 8.3587	{2} 5.8596	{3} 7.6853	{4} 10.485
1	0	0		0.22730	0.65518	0.16205
2	0	1	0.22730		0.22870	0.01661
3	1	0	0.65518	0.22870		0.15823
4	1	1	0.16205	0.01661	0.15823	

A5.1.4.2.3.7.1. Open Field P63 1min time-bins 7th interval Descriptive Statistics

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	7. Distance moved (cm) Mean	7. Distance moved (cm) Std.Dev.	7. Distance moved (cm) Std.Err	7. Distance moved (cm) -95.00%	7. Distance moved (cm) +95.00%
Total				61	356.886	201.120	25.750	305.377	408.395
MS	0			32	338.825	196.175	34.679	268.096	409.553
MS	1			29	376.816	208.050	38.634	297.677	455.954
Running	0			28	346.998	210.672	39.813	265.308	428.688
Running	1			33	365.276	195.541	34.039	295.940	434.612
Lesion	0			32	377.120	181.476	32.080	311.691	442.550
Lesion	1			29	334.558	221.880	41.202	250.159	418.957
MS*Running	0	0		15	302.268	196.633	50.770	193.377	411.160
MS*Running	0	1		17	371.080	195.893	47.511	270.361	471.800
MS*Running	1	0		13	398.609	222.184	61.623	264.344	532.874
MS*Running	1	1		16	359.108	201.394	50.348	251.793	466.424
MS*Lesion	0	0		17	348.337	189.608	45.986	250.849	445.825
MS*Lesion	0	1		15	328.044	209.509	54.095	212.022	444.067
MS*Lesion	1	0		15	409.742	172.310	44.490	314.320	505.165
MS*Lesion	1	1		14	341.537	242.205	64.732	201.692	481.382
Running*Lesion	0	0		15	379.662	172.852	44.630	283.940	475.385
Running*Lesion	0	1		13	309.309	249.261	69.132	158.682	459.936
Running*Lesion	1	0		17	374.878	194.047	47.063	275.108	474.648
Running*Lesion	1	1		16	355.073	202.956	50.739	246.926	463.221
MS*Running*Les	0	0	0	8	366.014	209.282	73.992	191.050	540.979
MS*Running*Les	0	0	1	7	229.416	165.856	62.687	76.025	382.807
MS*Running*Les	0	1	0	9	332.623	181.627	60.542	193.012	472.235
MS*Running*Les	0	1	1	8	414.344	214.408	75.804	235.094	593.594
MS*Running*Les	1	0	0	7	395.260	134.477	50.827	270.889	519.630
MS*Running*Les	1	0	1	6	402.517	311.036	126.980	76.104	728.929
MS*Running*Les	1	1	0	8	422.414	208.537	73.729	248.073	596.756
MS*Running*Les	1	1	1	8	295.803	185.110	65.446	141.046	450.559

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	7. Inner zone duration (s) Mean	7. Inner zone duration (s) Std.Dev.	7. Inner zone duration (s) Std.Err	7. Inner zone duration (s) -95.00%	7. Inner zone duration (s) +95.00%
Total				61	2.79234	4.19873	0.53759	1.7170	3.8676
MS	0			32	2.64582	4.40058	0.77792	1.0592	4.2324
MS	1			29	2.95402	4.03554	0.74938	1.4189	4.4890
Running	0			28	2.73213	4.05881	0.76704	1.1582	4.3059
Running	1			33	2.84343	4.37598	0.76176	1.2917	4.3950
Lesion	0			32	3.16667	4.24095	0.74970	1.6376	4.6957
Lesion	1			29	2.37929	4.18660	0.77743	0.7868	3.9718
MS*Running	0	0		15	1.68888	2.52121	0.65097	0.2926	3.0850
MS*Running	0	1		17	3.49018	5.50835	1.33597	0.6580	6.3223
MS*Running	1	0		13	3.93588	5.16917	1.43367	0.8121	7.0595
MS*Running	1	1		16	2.15625	2.74028	0.68507	0.6960	3.6164
MS*Lesion	0	0		17	2.99999	5.32616	1.29178	0.2615	5.7384
MS*Lesion	0	1		15	2.24442	3.18344	0.82196	0.4814	4.0073
MS*Lesion	1	0		15	3.35556	2.70791	0.69918	1.8559	4.8551
MS*Lesion	1	1		14	2.52380	5.17633	1.38343	-0.4649	5.5125
Running*Lesion	0	0		15	2.29999	2.50491	0.64676	0.9128	3.6871
Running*Lesion	0	1		13	3.23075	5.40771	1.49983	-0.0371	6.4986
Running*Lesion	1	0		17	3.93137	5.29447	1.28409	1.2092	6.6535
Running*Lesion	1	1		16	1.68749	2.86089	0.71522	0.1630	3.2119
MS*Running*Les	0	0	0	8	1.72916	2.52752	0.89361	-0.3839	3.8422
MS*Running*Les	0	0	1	7	1.64283	2.71553	1.02637	-0.8686	4.1542
MS*Running*Les	0	1	0	9	4.12962	6.93510	2.31170	-1.2011	9.4604
MS*Running*Les	0	1	1	8	2.77081	3.64271	1.28789	-0.2745	5.8162
MS*Running*Les	1	0	0	7	2.95238	2.50132	0.94541	0.6390	5.2657
MS*Running*Les	1	0	1	6	5.08331	7.32712	2.99128	-2.6060	12.7726
MS*Running*Les	1	1	0	8	3.70834	2.99967	1.06054	1.2005	6.2161
MS*Running*Les	1	1	1	8	0.60416	1.25968	0.44536	-0.4489	1.6572

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	7. Inner Zone frequency Mean	7. Inner Zone frequency Std.Dev.	7. Inner Zone frequency Std.Err	7. Inner Zone frequency -95.00%	7. Inner Zone frequency +95.00%
Total				61	1.29508	1.64665	0.21083	0.8733	1.71681
MS	0			32	1.06250	1.34254	0.23733	0.5784	1.54653
MS	1			29	1.55172	1.91956	0.35645	0.8215	2.28188
Running	0			28	1.32142	1.67892	0.31728	0.6704	1.97244
Running	1			33	1.27272	1.64455	0.28627	0.6896	1.85585
Lesion	0			32	1.50000	1.54502	0.27312	0.9429	2.05704
Lesion	1			29	1.06896	1.75114	0.32517	0.4028	1.73506
MS*Running	0	0		15	1.00000	1.25356	0.32366	0.3058	1.69420
MS*Running	0	1		17	1.11764	1.45268	0.35232	0.3707	1.86454
MS*Running	1	0		13	1.69230	2.05688	0.57047	0.4493	2.93527
MS*Running	1	1		16	1.43750	1.86077	0.46519	0.4459	2.42903
MS*Lesion	0	0		17	1.00000	1.22474	0.29704	0.3702	1.62970
MS*Lesion	0	1		15	1.13333	1.50554	0.38873	0.2995	1.96707
MS*Lesion	1	0		15	2.06666	1.70991	0.44149	1.1197	3.01358
MS*Lesion	1	1		14	1.00000	2.03809	0.54470	-0.1767	2.17676
Running*Lesion	0	0		15	1.20000	1.08232	0.27945	0.6006	1.79937
Running*Lesion	0	1		13	1.46153	2.22168	0.61618	0.1189	2.80409
Running*Lesion	1	0		17	1.76470	1.85504	0.44991	0.8109	2.71848
Running*Lesion	1	1		16	0.75000	1.23827	0.30957	0.0901	1.40983
MS*Running*Les	0	0	0	8	1.00000	1.06904	0.37796	0.1062	1.89374
MS*Running*Les	0	0	1	7	1.00000	1.52752	0.57735	-0.4127	2.41272
MS*Running*Les	0	1	0	9	1.00000	1.41421	0.47140	-0.0870	2.08706
MS*Running*Les	0	1	1	8	1.25000	1.58113	0.55901	-0.0718	2.57186
MS*Running*Les	1	0	0	7	1.42857	1.13389	0.42857	0.3798	2.47724
MS*Running*Les	1	0	1	6	2.00000	2.89827	1.18321	-1.0415	5.04155
MS*Running*Les	1	1	0	8	2.62500	1.99553	0.70552	0.9566	4.29330
MS*Running*Les	1	1	1	8	0.25000	0.46291	0.16366	-0.1370	0.63700

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	7. Velocity max (cm/s) Mean	7. Velocity max (cm/s) Std.Dev.	7. Velocity max (cm/s) Std.Err	7. Velocity max (cm/s) -95.00%	7. Velocity max (cm/s) +95.00%
Total				61	55.2847	26.0041	3.3294	48.6247	61.9446
MS	0			32	53.5472	26.5100	4.6863	43.9894	63.1051
MS	1			29	57.2018	25.7623	4.7839	47.4024	67.0013
Running	0			28	54.1368	28.6617	5.4165	43.0230	65.2507
Running	1			33	56.2586	23.9298	4.1656	47.7734	64.7437
Lesion	0			32	59.4460	22.5942	3.9941	51.2999	67.5921
Lesion	1			29	50.6929	29.0208	5.3890	39.6539	61.7318
MS*Running	0	0		15	50.3354	30.6817	7.9220	33.3444	67.3264
MS*Running	0	1		17	56.3812	22.7977	5.5292	44.6597	68.1027
MS*Running	1	0		13	58.5231	26.6681	7.3964	42.4077	74.6384
MS*Running	1	1		16	56.1283	25.8303	6.4575	42.3643	69.8923
MS*Lesion	0	0		17	56.7399	23.6241	5.7297	44.5934	68.8863
MS*Lesion	0	1		15	49.9289	29.8651	7.7111	33.3902	66.4677
MS*Lesion	1	0		15	62.5129	21.7622	5.6189	50.4614	74.5644
MS*Lesion	1	1		14	51.5113	29.1899	7.8013	34.6576	68.3651
Running*Lesion	0	0		15	60.5499	22.9079	5.9148	47.8638	73.2359
Running*Lesion	0	1		13	46.7372	33.5469	9.3042	26.4650	67.0094
Running*Lesion	1	0		17	58.4720	22.9731	5.5718	46.6603	70.2837
Running*Lesion	1	1		16	53.9069	25.4406	6.3601	40.3505	67.4632
MS*Running*Les	0	0	0	8	59.9585	27.4455	9.7034	37.0134	82.9036
MS*Running*Les	0	0	1	7	39.3376	32.4522	12.2658	9.3243	69.3510
MS*Running*Les	0	1	0	9	53.8789	20.9172	6.9724	37.8004	69.9573
MS*Running*Les	0	1	1	8	59.1963	25.9003	9.1571	37.5431	80.8496
MS*Running*Les	1	0	0	7	61.2257	18.5653	7.0170	44.0556	78.3958
MS*Running*Les	1	0	1	6	55.3700	35.6522	14.5549	17.9552	92.7847
MS*Running*Les	1	1	0	8	63.6392	25.4685	9.0044	42.3470	84.9314
MS*Running*Les	1	1	1	8	48.6174	25.5369	9.0286	27.2679	69.9668

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	7. Velocity mean (cm/s) Mean	7. Velocity mean (cm/s) Std.Dev.	7. Velocity mean (cm/s) Std.Err	7. Velocity mean (cm/s) -95.00%	7. Velocity mean (cm/s) +95.00%
Total				61	7.13773	4.02241	0.51501	6.10754	8.1679
MS	0			32	6.77650	3.92350	0.69358	5.36192	8.1910
MS	1			29	7.53632	4.16101	0.77268	5.95355	9.1190
Running	0			28	6.93997	4.21344	0.79626	5.30616	8.5737
Running	1			33	7.30552	3.91083	0.68078	5.91880	8.6922
Lesion	0			32	7.54242	3.62953	0.64161	6.23383	8.8510
Lesion	1			29	6.69117	4.43760	0.82404	5.00320	8.3791
MS*Running	0	0		15	6.04537	3.93266	1.01540	3.86754	8.2232
MS*Running	0	1		17	7.42161	3.91787	0.95022	5.40722	9.4360
MS*Running	1	0		13	7.97219	4.44369	1.23246	5.28689	10.6575
MS*Running	1	1		16	7.18218	4.02789	1.00697	5.03586	9.3285
MS*Lesion	0	0		17	6.96674	3.79218	0.91973	5.01698	8.9165
MS*Lesion	0	1		15	6.56090	4.19019	1.08190	4.24044	8.8813
MS*Lesion	1	0		15	8.19485	3.44621	0.88980	6.28640	10.1033
MS*Lesion	1	1		14	6.83075	4.84410	1.29464	4.03385	9.6276
Running*Lesion	0	0		15	7.59325	3.45705	0.89260	5.67880	9.5077
Running*Lesion	0	1		13	6.18618	4.98522	1.38265	3.17364	9.1987
Running*Lesion	1	0		17	7.49756	3.88095	0.94126	5.50216	9.4929
Running*Lesion	1	1		16	7.10148	4.05912	1.01478	4.93852	9.2644
MS*Running*Les	0	0	0	8	7.32029	4.18564	1.47985	3.82100	10.8195
MS*Running*Les	0	0	1	7	4.58833	3.31712	1.25375	1.52050	7.6561
MS*Running*Les	0	1	0	9	6.65247	3.63255	1.21085	3.86024	9.4447
MS*Running*Les	0	1	1	8	8.28689	4.28817	1.51609	4.70189	11.8719
MS*Running*Les	1	0	0	7	7.90520	2.68954	1.01655	5.41779	10.3926
MS*Running*Les	1	0	1	6	8.05034	6.22072	2.53960	1.52209	14.5786
MS*Running*Les	1	1	0	8	8.44829	4.17075	1.47458	4.96146	11.9351
MS*Running*Les	1	1	1	8	5.91606	3.70221	1.30892	2.82093	9.0111

A5.1.4.2.3.7.2. Open Field P63 1 min intervals 7th interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 7. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	768263	1	768263	185.600	0.00000
MS	2833	1	2833	0.684	0.41173
Running	487	1	487	0.117	0.73291
Lesion	2854	1	2854	0.689	0.41003
MS*Running	5021	1	5021	1.213	0.27568
MS*Lesion	390	1	390	0.094	0.75981
Running*Lesion	670	1	670	0.162	0.68893
MS*Running*Lesion	1166	1	1166	2.817	0.09912
Error	21938	53	4139		

A5.1.4.2.3.7.3. Open Field P63 1 min intervals 7th interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 7. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	481.145	1	481.145	26.9369	0.00000
MS	4.051	1	4.051	0.2268	0.63584
Running	0.035	1	0.035	0.0020	0.96453
Lesion	5.499	1	5.499	0.3078	0.58131
MS*Running	49.446	1	49.446	2.7682	0.10205
MS*Lesion	0.209	1	0.209	0.0117	0.91419
Running*Lesion	39.820	1	39.820	2.2293	0.14134
MS*Running*Lesion	14.765	1	14.765	0.8266	0.36736
Error	946.681	53	17.861		

A5.1.4.2.3.7.4. Open Field P63 1 min intervals 7th Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 7. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	104.728	1	104.728	41.2410	0.00000
MS	3.965	1	3.965	1.5615	0.21693
Running	0.086	1	0.086	0.0341	0.85415
Lesion	2.269	1	2.269	0.8937	0.34876
MS*Running	0.607	1	0.607	0.2391	0.62687
MS*Lesion	3.965	1	3.965	1.5615	0.21693
Running*Lesion	6.836	1	6.836	2.6922	0.10676
MS*Running*Lesion	9.607	1	9.607	3.7832	0.05708
Error	134.589	53	2.539		

A5.1.4.2.3.7.5. Open Field P63 1 min intervals 7th Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 7. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	183056.	1	183056.	259.989	0.00000
MS	255.4	1	255.4	0.362	0.54955
Running	83.8	1	83.8	0.119	0.73147
Lesion	1230.9	1	1230.9	1.748	0.19177
MS*Running	308.7	1	308.7	0.438	0.51076
MS*Lesion	29.2	1	29.2	0.041	0.83936
Running*Lesion	264.5	1	264.5	0.375	0.54254
MS*Running*Lesion	1158.7	1	1158.7	1.645	0.20512
Error	37316.	53	704.1		

A5.1.4.2.3.7.6. Open Field P63 1 min intervals 7th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 7. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	3073.05(	1	3073.05(	185.600(	0.00000(
MS	11.335	1	11.335	0.684(	0.41173(
Running	1.949	1	1.949	0.117	0.73291
Lesion	11.418	1	11.418	0.689(	0.41003(
MS*Running	20.087	1	20.087	1.213	0.27568
MS*Lesion	1.564	1	1.564	0.094	0.75981
Running*Lesion	2.682	1	2.682	0.162(	0.68893
MS*Running*Lesion	46.653	1	46.653	2.817(	0.09912
Error	877.54(	53	16.557		

A5.1.4.2.3.8.1. Open Field P63 1min time-bins 8th interval Descriptive Statistics

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	8. Distance moved (cm) Mean	8. Distance moved (cm) Std.Dev.	8. Distance moved (cm) Std.Err	8. Distance moved (cm) -95.00%	8. Distance moved (cm) +95.00%
Total				61	359.185	207.411	26.5562	306.065	412.306
MS	0			32	333.399	213.487	37.7396	256.429	410.370
MS	1			29	387.638	200.314	37.1974	311.443	463.834
Running	0			28	400.965	208.007	39.3097	320.308	481.622
Running	1			33	323.735	203.301	35.3901	251.648	395.823
Lesion	0			32	359.059	195.726	34.5998	288.492	429.626
Lesion	1			29	359.324	223.094	41.4275	274.463	444.184
MS*Running	0	0		15	377.385	228.871	59.0942	250.640	504.129
MS*Running	0	1		17	294.589	197.628	47.9318	192.978	396.200
MS*Running	1	0		13	428.174	186.391	51.6957	315.538	540.809
MS*Running	1	1		16	354.703	211.014	52.7535	242.262	467.145
MS*Lesion	0	0		17	343.699	221.867	53.8108	229.625	457.773
MS*Lesion	0	1		15	321.727	210.684	54.3986	205.054	438.400
MS*Lesion	1	0		15	376.468	167.206	43.1725	283.872	469.064
MS*Lesion	1	1		14	399.606	236.681	63.2557	262.951	536.262
Running*Lesion	0	0		15	407.554	176.182	45.4901	309.988	505.121
Running*Lesion	0	1		13	393.363	247.023	68.5120	244.088	542.638
Running*Lesion	1	0		17	316.270	207.154	50.2423	209.761	422.779
Running*Lesion	1	1		16	331.667	205.595	51.3987	222.113	441.221
MS*Running*Les	0	0	0	8	392.245	211.049	74.6174	215.802	568.687
MS*Running*Les	0	0	1	7	360.402	263.871	99.7339	116.362	604.442
MS*Running*Les	0	1	0	9	300.547	234.573	78.1912	120.238	480.856
MS*Running*Les	0	1	1	8	287.886	162.143	57.3264	152.331	423.442
MS*Running*Les	1	0	0	7	425.051	140.683	53.1735	294.940	555.162
MS*Running*Les	1	0	1	6	431.817	244.132	99.6666	175.615	688.018
MS*Running*Les	1	1	0	8	333.958	185.811	65.6943	178.615	489.300
MS*Running*Les	1	1	1	8	375.449	244.755	86.5342	170.828	580.070

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	8. Inner zone duration (s) Mean	8. Inner zone duration (s) Std.Dev.	8. Inner zone duration (s) Std.Err	8. Inner zone duration (s) -95.00%	8. Inner zone duration (s) +95.00%
Total				61	2.62296	4.80461	0.61516	1.3924	3.8534
MS	0			32	2.42188	4.21660	0.74539	0.9016	3.9421
MS	1			29	2.84483	5.44835	1.01173	0.7723	4.9172
Running	0			28	3.20239	5.16587	0.97625	1.1992	5.2055
Running	1			33	2.13131	4.49706	0.78283	0.5367	3.7259
Lesion	0			32	2.58334	3.63970	0.64341	1.2710	3.8956
Lesion	1			29	2.66667	5.89880	1.09538	0.4228	4.9104
MS*Running	0	0		15	3.46669	5.02781	1.29817	0.6823	6.2510
MS*Running	0	1		17	1.50000	3.22533	0.78225	-0.1583	3.1583
MS*Running	1	0		13	2.89743	5.51033	1.52829	-0.4324	6.2273
MS*Running	1	1		16	2.80209	5.57814	1.39453	-0.1702	5.7744
MS*Lesion	0	0		17	3.09804	3.93042	0.95326	1.0772	5.1188
MS*Lesion	0	1		15	1.65557	4.53099	1.16989	-0.8536	4.1647
MS*Lesion	1	0		15	2.00001	3.31545	0.85604	0.1639	3.8360
MS*Lesion	1	1		14	3.75000	7.09875	1.89722	-0.3487	7.8487
Running*Lesion	0	0		15	2.36667	3.21469	0.83003	0.5864	4.1469
Running*Lesion	0	1		13	4.16669	6.79020	1.88326	0.0634	8.2699
Running*Lesion	1	0		17	2.77451	4.06713	0.98642	0.6833	4.8656
Running*Lesion	1	1		16	1.44791	4.95300	1.23825	-1.1913	4.0871
MS*Running*Les	0	0	0	8	3.45835	3.96591	1.40216	0.1427	6.7739
MS*Running*Les	0	0	1	7	3.47623	6.37449	2.40933	-2.4191	9.3716
MS*Running*Les	0	1	0	9	2.77777	4.10960	1.36986	-0.3811	5.9367
MS*Running*Les	0	1	1	8	0.06250	0.12400	0.04384	-0.0411	0.1661
MS*Running*Les	1	0	0	7	1.11904	1.53572	0.58045	-0.3012	2.5393
MS*Running*Les	1	0	1	6	4.97222	7.77493	3.17410	-3.1870	13.1315
MS*Running*Les	1	1	0	8	2.77085	4.30205	1.52100	-0.8257	6.3674
MS*Running*Les	1	1	1	8	2.83333	6.94021	2.45373	-2.9688	8.6355

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	8. Inner Zone frequency Mean	8. Inner Zone frequency Std.Dev.	8. Inner Zone frequency Std.Err	8. Inner Zone frequency -95.00%	8. Inner Zone frequency +95.00%
Total				61	1.13114	1.83916	0.23548	0.6601	1.60217
MS	0			32	1.09375	1.82030	0.32178	0.4374	1.75004
MS	1			29	1.17241	1.89112	0.35117	0.4530	1.89175
Running	0			28	1.50000	2.20269	0.41627	0.6458	2.35411
Running	1			33	0.81818	1.42422	0.24792	0.3131	1.32318
Lesion	0			32	1.18750	1.61520	0.28553	0.6051	1.76984
Lesion	1			29	1.06896	2.08619	0.38739	0.2754	1.86251
MS*Running	0	0		15	1.53333	2.26358	0.58445	0.2798	2.78686
MS*Running	0	1		17	0.70588	1.26316	0.30636	0.0564	1.35534
MS*Running	1	0		13	1.46153	2.22168	0.61618	0.1189	2.80409
MS*Running	1	1		16	0.93750	1.61115	0.40279	0.0789	1.79602
MS*Lesion	0	0		17	1.29411	1.61108	0.39074	0.4657	2.12246
MS*Lesion	0	1		15	0.86666	2.06559	0.53333	-0.2772	2.01055
MS*Lesion	1	0		15	1.06666	1.66761	0.43057	0.1431	1.99016
MS*Lesion	1	1		14	1.28571	2.16363	0.57825	0.0364	2.53496
Running*Lesion	0	0		15	1.26666	1.57963	0.40785	0.3919	2.14143
Running*Lesion	0	1		13	1.76923	2.80338	0.77751	0.0751	3.46330
Running*Lesion	1	0		17	1.11764	1.69124	0.41018	0.2480	1.98720
Running*Lesion	1	1		16	0.50000	1.03279	0.25819	-0.0503	1.05033
MS*Running*Les	0	0	0	8	1.50000	1.69030	0.59761	0.0868	2.91313
MS*Running*Les	0	0	1	7	1.57142	2.93582	1.10963	-1.1437	4.28661
MS*Running*Les	0	1	0	9	1.11111	1.61589	0.53863	-0.1309	2.35319
MS*Running*Les	0	1	1	8	0.25000	0.46291	0.16366	-0.1370	0.63700
MS*Running*Les	1	0	0	7	1.00000	1.52752	0.57735	-0.4127	2.41272
MS*Running*Les	1	0	1	6	2.00000	2.89827	1.18321	-1.0415	5.04155
MS*Running*Les	1	1	0	8	1.12500	1.88509	0.66648	-0.4509	2.70097
MS*Running*Les	1	1	1	8	0.75000	1.38873	0.49099	-0.4110	1.91100

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	8. Velocity max (cm/s) Mean	8. Velocity max (cm/s) Std.Dev.	8. Velocity max (cm/s) Std.Err	8. Velocity max (cm/s) -95.00%	8. Velocity max (cm/s) +95.00%
Total				61	54.0921	24.3744	3.1208	47.8495	60.3346
MS	0			32	51.3647	24.5177	4.3341	42.5251	60.2042
MS	1			29	57.1016	24.2835	4.5093	47.8646	66.3386
Running	0			28	56.3266	24.8715	4.7002	46.6824	65.9707
Running	1			33	52.1961	24.1650	4.2065	43.6276	60.7647
Lesion	0			32	54.5312	25.0172	4.4224	45.5115	63.5509
Lesion	1			29	53.6075	24.0773	4.4710	44.4490	62.7660
MS*Running	0	0		15	50.8784	27.2778	7.0431	35.7724	65.9843
MS*Running	0	1		17	51.7937	22.6535	5.4942	40.1464	63.4411
MS*Running	1	0		13	62.6129	21.0671	5.8429	49.8822	75.3437
MS*Running	1	1		16	52.6237	26.4193	6.6048	38.5458	66.7016
MS*Lesion	0	0		17	50.6978	26.9643	6.5398	36.8341	64.5616
MS*Lesion	0	1		15	52.1204	22.3373	5.7674	39.7504	64.4904
MS*Lesion	1	0		15	58.8757	22.7338	5.8698	46.2861	71.4653
MS*Lesion	1	1		14	55.2008	26.5706	7.1013	39.8594	70.5422
Running*Lesion	0	0		15	59.4274	23.4953	6.0664	46.4161	72.4387
Running*Lesion	0	1		13	52.7487	26.8683	7.4519	36.5123	68.9851
Running*Lesion	1	0		17	50.2110	26.2159	6.3583	36.7320	63.6900
Running*Lesion	1	1		16	54.3053	22.4377	5.6094	42.3490	66.2615
MS*Running*Les	0	0	0	8	53.7244	29.1934	10.3214	29.3180	78.1307
MS*Running*Les	0	0	1	7	47.6258	26.8093	10.1329	22.8313	72.4202
MS*Running*Les	0	1	0	9	48.0076	26.2891	8.7630	27.7999	68.2152
MS*Running*Les	0	1	1	8	56.0532	18.5464	6.5571	40.5479	71.5584
MS*Running*Les	1	0	0	7	65.9451	14.1719	5.3564	52.8382	79.0520
MS*Running*Les	1	0	1	6	58.7254	28.1155	11.4781	29.2199	88.2309
MS*Running*Les	1	1	0	8	52.6899	27.7091	9.7966	29.5245	75.8554
MS*Running*Les	1	1	1	8	52.5574	26.9791	9.5385	30.0023	75.1125

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	8. Velocity mean (cm/s) Mean	8. Velocity mean (cm/s) Std.Dev.	8. Velocity mean (cm/s) Std.Err	8. Velocity mean (cm/s) -95.00%	8. Velocity mean (cm/s) +95.00%
Total				61	7.18371	4.14822	0.53112	6.12130	8.2461
MS	0			32	6.66800	4.26975	0.75479	5.12859	8.2074
MS	1			29	7.75277	4.00629	0.74394	6.22886	9.2766
Running	0			28	8.01932	4.16015	0.78619	6.40618	9.6324
Running	1			33	6.47471	4.06602	0.70780	5.03296	7.9164
Lesion	0			32	7.18120	3.91453	0.69199	5.76986	8.5925
Lesion	1			29	7.18649	4.46188	0.82855	5.48927	8.8837
MS*Running	0	0		15	7.54770	4.57742	1.18188	5.01281	10.0826
MS*Running	0	1		17	5.89178	3.95256	0.95863	3.85956	7.9240
MS*Running	1	0		13	8.56348	3.72783	1.03391	6.31078	10.8162
MS*Running	1	1		16	7.09407	4.22028	1.05507	4.84524	9.3429
MS*Lesion	0	0		17	6.87398	4.43735	1.07621	4.59250	9.1554
MS*Lesion	0	1		15	6.43455	4.21370	1.08797	4.10108	8.7680
MS*Lesion	1	0		15	7.52937	3.34413	0.86345	5.67745	9.3813
MS*Lesion	1	1		14	7.99213	4.73362	1.26511	5.25902	10.7252
Running*Lesion	0	0		15	8.15110	3.52365	0.90980	6.19976	10.1024
Running*Lesion	0	1		13	7.86726	4.94047	1.37024	4.88176	10.8527
Running*Lesion	1	0		17	6.32540	4.14309	1.00484	4.19522	8.4555
Running*Lesion	1	1		16	6.63335	4.11190	1.02797	4.44228	8.8244
MS*Running*Les	0	0	0	8	7.84490	4.22099	1.49234	4.31605	11.3737
MS*Running*Les	0	0	1	7	7.20805	5.27742	1.99468	2.32725	12.0888
MS*Running*Les	0	1	0	9	6.01094	4.69147	1.56382	2.40476	9.6171
MS*Running*Les	0	1	1	8	5.75773	3.24287	1.14652	3.04662	8.4688
MS*Running*Les	1	0	0	7	8.50104	2.81368	1.06347	5.89882	11.1032
MS*Running*Les	1	0	1	6	8.63634	4.88264	1.99333	3.51232	13.7603
MS*Running*Les	1	1	0	8	6.67916	3.71623	1.31388	3.57232	9.7860
MS*Running*Les	1	1	1	8	7.50898	4.89511	1.73068	3.41656	11.6014

A5.1.4.2.3.8.2. Open Field P63 1 min intervals 8th interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 8. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	794808	1	794808	173.241	0.00000
MS	4768	1	4768	1.039	0.31259
Running	9134	1	9134	1.990	0.16408
Lesion	13	1	13	0.000	0.98650
MS*Running	264	1	264	0.005	0.93983
MS*Lesion	8091	1	8091	0.176	0.67623
Running*Lesion	2732	1	2732	0.059	0.80813
MS*Running*Lesion	227	1	227	0.005	0.94416
Error	243156	53	4587		

A5.1.4.2.3.8.3. Open Field P63 1 min intervals 8th interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 8. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	433.45	1	433.453	18.0571	0.00008
MS	3.468	1	3.4685	0.1444	0.70537
Running	19.736	1	19.736	0.8221	0.36864
Lesion	1.396	1	1.3956	0.0581	0.81039
MS*Running	12.235	1	12.235	0.5097	0.47839
MS*Lesion	41.122	1	41.121	1.7130	0.19623
Running*Lesion	40.020	1	40.019	1.6671	0.20224
MS*Running*Lesion	1.052	1	1.0516	0.0438	0.83501
Error	1272.24	53	24.004		

A5.1.4.2.3.8.4. Open Field P63 1 min intervals 8th interval Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 8. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	81.458	1	81.4583	22.9060	0.00001
MS	0.184	1	0.1840	0.0517	0.82089
Running	7.559	1	7.5590	2.1256	0.15075
Lesion	0.025	1	0.0255	0.0071	0.93283
MS*Running	0.322	1	0.3221	0.0905	0.76461
MS*Lesion	1.881	1	1.8818	0.5291	0.47015
Running*Lesion	5.006	1	5.0068	1.4079	0.24069
MS*Running*Lesion	0.184	1	0.1840	0.0517	0.82089
Error	188.478	53	3.5561		

A5.1.4.2.3.8.5. Open Field P63 1 min intervals 8th Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 8. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	178197.	1	178197.	279.073	0.00000
MS	564.7	1	564.7	0.884	0.35126
Running	262.6	1	262.6	0.411	0.52406
Lesion	27.5	1	27.5	0.043	0.83647
MS*Running	460.7	1	460.7	0.721	0.39949
MS*Lesion	81.3	1	81.3	0.127	0.72262
Running*Lesion	423.9	1	423.9	0.663	0.41886
MS*Running*Lesion	46.8	1	46.8	0.073	0.78758
Error	33842.	53	638.5		

A5.1.4.2.3.8.6. Open Field P63 1 min intervals 8th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 8. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	3179.23	1	3179.23	173.241	0.00000
MS	19.074	1	19.074	1.0394	0.31259
Running	36.537	1	36.537	1.9909	0.16408
Lesion	0.005	1	0.005	0.0003	0.98650
MS*Running	0.106	1	0.106	0.0058	0.93983
MS*Lesion	3.236	1	3.236	0.1763	0.67623
Running*Lesion	1.093	1	1.093	0.0596	0.80813
MS*Running*Lesion	0.091	1	0.091	0.0050	0.94416
Error	972.628	53	18.351		

A5.1.4.2.3.9.1. Open Field P63 1min time-bins 9th interval Descriptive Statistics

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	9. Distance moved (cm) Mean	9. Distance moved (cm) Std.Dev.	9. Distance moved (cm) Std.Err	9. Distance moved (cm) -95.00%	9. Distance moved (cm) +95.00%
Total				61	342.655	174.926	22.3970	297.854	387.456
MS	0			32	367.160	169.236	29.9170	306.144	428.176
MS	1			29	315.615	180.047	33.4339	247.128	384.101
Running	0			28	391.571	161.344	30.4912	329.008	454.134
Running	1			33	301.151	177.592	30.9149	238.179	364.122
Lesion	0			32	355.068	171.919	30.3913	293.084	417.051
Lesion	1			29	328.958	180.213	33.4647	260.409	397.508
MS*Running	0	0		15	423.933	161.325	41.6541	334.594	513.272
MS*Running	0	1		17	317.066	164.411	39.8755	232.534	401.598
MS*Running	1	0		13	354.229	159.338	44.1925	257.942	450.516
MS*Running	1	1		16	284.241	194.572	48.6431	180.560	387.921
MS*Lesion	0	0		17	394.444	167.528	40.6316	308.309	480.580
MS*Lesion	0	1		15	336.238	171.509	44.2834	241.259	431.216
MS*Lesion	1	0		15	310.441	171.330	44.2372	215.561	405.320
MS*Lesion	1	1		14	321.159	195.307	52.1981	208.391	433.926
Running*Lesion	0	0		15	423.292	158.562	40.9405	335.483	511.101
Running*Lesion	0	1		13	354.969	162.882	45.1755	256.540	453.398
Running*Lesion	1	0		17	294.870	164.475	39.8910	210.304	379.435
Running*Lesion	1	1		16	307.824	195.795	48.9488	203.492	412.156
MS*Running*Les	0	0	0	8	487.953	127.385	45.0376	381.456	594.450
MS*Running*Les	0	0	1	7	350.768	173.451	65.5586	190.352	511.184
MS*Running*Les	0	1	0	9	311.325	159.426	53.1420	188.780	433.871
MS*Running*Les	0	1	1	8	323.524	180.685	63.8821	172.467	474.581
MS*Running*Les	1	0	0	7	349.393	166.694	63.0045	195.227	503.560
MS*Running*Les	1	0	1	6	359.871	165.884	67.7220	185.786	533.956
MS*Running*Les	1	1	0	8	276.357	179.013	63.2906	126.698	426.016
MS*Running*Les	1	1	1	8	292.124	221.218	78.2124	107.181	477.067

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	9. Inner zone duration (s) Mean	9. Inner zone duration (s) Std.Dev.	9. Inner zone duration (s) Std.Err	9. Inner zone duration (s) -95.00%	9. Inner zone duration (s) +95.00%
Total				61	3.09562	4.45922	0.57094	1.9535	4.2376
MS	0			32	3.53645	4.68119	0.82752	1.8487	5.2242
MS	1			29	2.60918	4.22864	0.78524	1.0006	4.2176
Running	0			28	4.10713	4.66011	0.88067	2.3001	5.9141
Running	1			33	2.23736	4.15999	0.72416	0.7623	3.7124
Lesion	0			32	3.72916	4.49367	0.79437	2.1090	5.3493
Lesion	1			29	2.39654	4.39186	0.81555	0.7259	4.0671
MS*Running	0	0		15	4.99999	4.96136	1.28101	2.2524	7.7475
MS*Running	0	1		17	2.24510	4.13998	1.00409	0.1165	4.3736
MS*Running	1	0		13	3.07692	4.24246	1.17664	0.5132	5.6406
MS*Running	1	1		16	2.22914	4.31697	1.07924	-0.0712	4.5295
MS*Lesion	0	0		17	4.30394	4.76944	1.15676	1.8517	6.7561
MS*Lesion	0	1		15	2.66664	4.58254	1.18320	0.1289	5.2043
MS*Lesion	1	0		15	3.07775	4.22614	1.09118	0.7374	5.4181
MS*Lesion	1	1		14	2.10714	4.33070	1.15742	-0.3933	4.6076
Running*Lesion	0	0		15	4.95556	4.76408	1.23008	2.3173	7.5938
Running*Lesion	0	1		13	3.12818	4.52163	1.25407	0.3957	5.8605
Running*Lesion	1	0		17	2.64704	4.07560	0.98848	0.5515	4.7425
Running*Lesion	1	1		16	1.80208	4.33684	1.08421	-0.5088	4.1130
MS*Running*Les	0	0	0	8	6.68752	5.18886	1.83454	2.3495	11.0255
MS*Running*Les	0	0	1	7	3.07138	4.22931	1.59852	-0.8400	6.9828
MS*Running*Les	0	1	0	9	2.18520	3.34735	1.11578	-0.3878	4.7582
MS*Running*Les	0	1	1	8	2.31249	5.13425	1.81523	-1.9798	6.6048
MS*Running*Les	1	0	0	7	2.97618	3.60224	1.36152	-0.3553	6.3077
MS*Running*Les	1	0	1	6	3.19444	5.25302	2.14453	-2.3182	8.7071
MS*Running*Les	1	1	0	8	3.16662	4.95769	1.75281	-0.9781	7.3113
MS*Running*Les	1	1	1	8	1.29166	3.65338	1.29166	-1.7626	4.3459

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	9. Inner Zone frequency Mean	9. Inner Zone frequency Std.Dev.	9. Inner Zone frequency Std.Err	9. Inner Zone frequency -95.00%	9. Inner Zone frequency +95.00%
Total				61	1.19672	1.50354	0.19251	0.81164	1.58179
MS	0			32	1.31250	1.28106	0.22646	0.85062	1.77437
MS	1			29	1.06896	1.73062	0.32137	0.41067	1.72726
Running	0			28	1.46428	1.42678	0.26963	0.91103	2.01753
Running	1			33	0.96969	1.55090	0.26997	0.41977	1.51962
Lesion	0			32	1.25000	1.45912	0.25793	0.72393	1.77606
Lesion	1			29	1.13793	1.57489	0.29245	0.53887	1.73698
MS*Running	0	0		15	1.60000	1.24211	0.32071	0.91213	2.28786
MS*Running	0	1		17	1.05882	1.29762	0.31472	0.39164	1.72599
MS*Running	1	0		13	1.30769	1.65250	0.45832	0.30909	2.30629
MS*Running	1	1		16	0.87500	1.82117	0.45529	-0.09543	1.84543
MS*Lesion	0	0		17	1.35294	1.27186	0.30847	0.69900	2.00687
MS*Lesion	0	1		15	1.26666	1.33452	0.34457	0.52763	2.00570
MS*Lesion	1	0		15	1.13333	1.68466	0.43497	0.20039	2.06627
MS*Lesion	1	1		14	1.00000	1.83973	0.49168	-0.06223	2.06223
Running*Lesion	0	0		15	1.33333	1.11269	0.28729	0.71714	1.94952
Running*Lesion	0	1		13	1.61538	1.75776	0.48751	0.55317	2.67759
Running*Lesion	1	0		17	1.17647	1.74052	0.42213	0.28157	2.07136
Running*Lesion	1	1		16	0.75000	1.34164	0.33541	0.03509	1.46491
MS*Running*Les	0	0	0	8	1.62500	1.18773	0.41992	0.63202	2.61797
MS*Running*Les	0	0	1	7	1.57142	1.39727	0.52812	0.27916	2.86369
MS*Running*Les	0	1	0	9	1.11111	1.36422	0.45474	0.06247	2.15974
MS*Running*Les	0	1	1	8	1.00000	1.30930	0.46291	-0.09460	2.09460
MS*Running*Les	1	0	0	7	1.00000	1.00000	0.37796	0.07515	1.92484
MS*Running*Les	1	0	1	6	1.66666	2.25092	0.91893	-0.69553	4.02886
MS*Running*Les	1	1	0	8	1.25000	2.18762	0.77344	-0.57890	3.07890
MS*Running*Les	1	1	1	8	0.50000	1.41421	0.50000	-0.68231	1.68231

	Descriptive Statistics (P63 1 min timebins spreadsheet)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	9. Velocity max (cm/s) Mean	9. Velocity max (cm/s) Std.Dev.	9. Velocity max (cm/s) Std.Err	9. Velocity max (cm/s) -95.00%	9. Velocity max (cm/s) +95.00%
Total				61	53.8600	24.3870	3.1224	47.6142	60.1058
MS	0			32	55.7302	23.1711	4.0961	47.3761	64.0843
MS	1			29	51.7962	25.9148	4.8122	41.9387	61.6537
Running	0			28	58.1818	22.7997	4.3087	49.3410	67.0227
Running	1			33	50.1929	25.4223	4.4254	41.1785	59.2073
Lesion	0			32	56.4646	24.3700	4.3080	47.6783	65.2509
Lesion	1			29	50.9859	24.5067	4.5507	41.6640	60.3078
MS*Running	0	0		15	61.1536	19.3269	4.9901	50.4507	71.8565
MS*Running	0	1		17	50.9449	25.7196	6.2379	37.7211	64.1688
MS*Running	1	0		13	54.7529	26.6468	7.3905	38.6504	70.8554
MS*Running	1	1		16	49.3939	25.9199	6.4799	35.5822	63.2057
MS*Lesion	0	0		17	60.9284	22.3921	5.4308	49.4154	72.4413
MS*Lesion	0	1		15	49.8390	23.3627	6.0322	36.9011	62.7768
MS*Lesion	1	0		15	51.4056	26.2755	6.7843	36.8547	65.9565
MS*Lesion	1	1		14	52.2147	26.5066	7.0842	36.9102	67.5193
Running*Lesion	0	0		15	61.3296	21.9396	5.6647	49.1798	73.4794
Running*Lesion	0	1		13	54.5498	24.1115	6.6873	39.9793	69.1202
Running*Lesion	1	0		17	52.1719	26.2245	6.3604	38.6885	65.6554
Running*Lesion	1	1		16	48.0902	25.2197	6.3049	34.6516	61.5289
MS*Running*Les	0	0	0	8	67.1655	15.0053	5.3051	54.6208	79.7103
MS*Running*Les	0	0	1	7	54.2828	22.4859	8.4988	33.4868	75.0788
MS*Running*Les	0	1	0	9	55.3843	27.0613	9.0204	34.5831	76.1855
MS*Running*Les	0	1	1	8	45.9506	24.9244	8.8121	25.1133	66.7879
MS*Running*Les	1	0	0	7	54.6600	27.6251	10.4413	29.1110	80.2090
MS*Running*Les	1	0	1	6	54.8613	28.0770	11.4624	25.3962	84.3264
MS*Running*Les	1	1	0	8	48.5580	26.5861	9.3996	26.3314	70.7846
MS*Running*Les	1	1	1	8	50.2298	27.0415	9.5606	27.6226	72.8371

Effect	Descriptive Statistics (P63 1 min timebins spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	9. Velocity mean (cm/s) Mean	9. Velocity mean (cm/s) Std.Dev.	9. Velocity mean (cm/s) Std.Err	9. Velocity mean (cm/s) -95.00%	9. Velocity mean (cm/s) +95.00%
Total				61	6.85311	3.49853	0.44794	5.95709	7.7491
MS	0			32	7.34321	3.38472	0.59834	6.12289	8.5635
MS	1			29	6.31230	3.60094	0.66867	4.94258	7.6820
Running	0			28	7.83142	3.22689	0.60982	6.58016	9.0826
Running	1			33	6.02302	3.55185	0.61829	4.76359	7.2824
Lesion	0			32	7.10136	3.43838	0.60782	5.86169	8.3410
Lesion	1			29	6.57917	3.60426	0.66929	5.20818	7.9501
MS*Running	0	0		15	8.47867	3.22651	0.83308	6.69189	10.2654
MS*Running	0	1		17	6.34133	3.28822	0.79751	4.65068	8.0319
MS*Running	1	0		13	7.08459	3.18677	0.88385	5.15884	9.0103
MS*Running	1	1		16	5.68482	3.89145	0.97286	3.61121	7.7584
MS*Lesion	0	0		17	7.88890	3.35057	0.81263	6.16619	9.6116
MS*Lesion	0	1		15	6.72476	3.43018	0.88567	4.82519	8.6243
MS*Lesion	1	0		15	6.20882	3.42660	0.88474	4.31123	8.1064
MS*Lesion	1	1		14	6.42318	3.90615	1.04396	4.16783	8.6785
Running*Lesion	0	0		15	8.46585	3.17124	0.81881	6.70967	10.2220
Running*Lesion	0	1		13	7.09939	3.25765	0.90351	5.13081	9.0679
Running*Lesion	1	0		17	5.89740	3.28950	0.79782	4.20609	7.5887
Running*Lesion	1	1		16	6.15649	3.91591	0.97897	4.06985	8.2431
MS*Running*Les	0	0	0	8	9.75907	2.54771	0.90075	7.62913	11.8890
MS*Running*Les	0	0	1	7	7.01536	3.46903	1.31117	3.80704	10.2236
MS*Running*Les	0	1	0	9	6.22652	3.18852	1.06284	3.77560	8.6774
MS*Running*Les	0	1	1	8	6.47049	3.61371	1.27764	3.44935	9.4916
MS*Running*Les	1	0	0	7	6.98788	3.33388	1.26009	3.90454	10.0712
MS*Running*Les	1	0	1	6	7.19742	3.31768	1.35444	3.71572	10.6791
MS*Running*Les	1	1	0	8	5.52714	3.58026	1.26581	2.53397	8.5203
MS*Running*Les	1	1	1	8	5.84249	4.42436	1.56425	2.14363	9.5413

A5.1.4.2.3.9.2. Open Field P63 1 min intervals 9th interval Distance travelled ANOVA

Effect	Univariate Tests of Significance for 9. Distance moved (cm) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	711783	1	711783	236.197	0.00000
MS	3605	1	3605	1.196	0.27895
Running	11169	1	11169	3.706	0.05957
Lesion	916	1	916	0.304	0.58356
MS*Running	374	1	374	0.124	0.72593
MS*Lesion	2150	1	2150	0.713	0.40203
Running*Lesion	2249	1	2249	0.746	0.39148
MS*Running*Lesion	1952	1	1952	0.647	0.42447
Error	159716	53	3013		

A5.1.4.2.3.9.3. Open Field P63 1 min intervals 9th interval Inner Zone duration ANOVA

Effect	Univariate Tests of Significance for 9. Inner zone duration (s) (P63 1 min t Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	582.31	1	582.317	29.3577	0.00000
MS	12.374	1	12.374	0.6238	0.43313
Running	45.727	1	45.727	2.3053	0.13487
Lesion	24.896	1	24.896	1.2551	0.26762
MS*Running	11.842	1	11.842	0.5970	0.44314
MS*Lesion	3.156	1	3.156	0.1591	0.69156
Running*Lesion	2.561	1	2.560	0.1291	0.72079
MS*Running*Lesion	32.033	1	32.032	1.6149	0.20934
Error	1051.26	53	19.835		

A5.1.4.2.3.9.4. Open Field P63 1 min intervals 9th interval Inner Zone frequency ANOVA

Effect	Univariate Tests of Significance for 9. Inner Zone frequency (P63 1 min ti Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	88.914	1	88.9148	37.0153	0.00000
MS	0.746	1	0.7462	0.3106	0.57961
Running	3.768	1	3.7686	1.5689	0.21586
Lesion	0.057	1	0.0578	0.0240	0.87727
MS*Running	0.026	1	0.0267	0.0111	0.91636
MS*Lesion	0.006	1	0.0062	0.0025	0.95959
Running*Lesion	2.043	1	2.0435	0.8507	0.36052
MS*Running*Lesion	1.736	1	1.7369	0.7230	0.39895
Error	127.311	53	2.4021		

A5.1.4.2.3.9.5. Open Field P63 1 min intervals 9th Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 9. Velocity max (cm/s) (P63 1 min time Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	174746.	1	174746.	277.258	0.00000
MS	197.0	1	197.0	0.312	0.57847
Running	894.7	1	894.7	1.419	0.23877
Lesion	393.0	1	393.0	0.623	0.43326
MS*Running	82.7	1	82.7	0.131	0.71856
MS*Lesion	550.2	1	550.2	0.873	0.35437
Running*Lesion	22.8	1	22.8	0.036	0.85001
MS*Running*Lesion	3.7	1	3.7	0.005	0.93937
Error	33403.9	53	630.3		

A5.1.4.2.3.9.6. Open Field P63 1 min intervals 9th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 9. Velocity mean (cm/s) (P63 1 min tim Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2847.13	1	2847.13	236.197	0.00000
MS	14.423	1	14.423	1.1965	0.27895
Running	44.678	1	44.678	3.7065	0.05957
Lesion	3.667	1	3.667	0.3042	0.58356
MS*Running	1.497	1	1.497	0.1242	0.72593
MS*Lesion	8.602	1	8.602	0.7136	0.40203
Running*Lesion	8.998	1	8.998	0.7465	0.39148
MS*Running*Lesion	7.809	1	7.809	0.6479	0.42447
Error	638.865	53	12.054		

A5.1.4.2.3.10.1. Open Field P63 1 minute intervals Distance travelled repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (P63 1 min timebins spreads Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	13682537	1	13682537	690.983	0.00000
MS	13362	1	13362	0.674	0.41506
Running	74440	1	74440	3.759	0.05784
Lesion	1725	1	1725	0.087	0.76902
MS*Running	11922	1	11922	0.602	0.44123
MS*Lesion	23743	1	23743	1.199	0.27845
Running*Lesion	2163	1	2163	0.109	0.74231
MS*Running*Lesion	30155	1	30155	1.522	0.22262
Error	1049481	53	19801		
TIME	1746603	8	218325	64.226	0.00000
TIME*MS	41724	8	5215	1.534	0.14311
TIME*Running	32626	8	4078	1.199	0.29744
TIME*Lesion	8366	8	1045	0.307	0.96305
TIME*MS*Running	21897	8	2737	0.805	0.59824
TIME*MS*Lesion	29215	8	3652	1.074	0.37997
TIME*Running*Lesion	14651	8	1831	0.538	0.82728
TIME*MS*Running*Lesion	13195	8	1649	0.485	0.86678
Error	1441303	424	3399		

A5.1.4.2.3.10.2. Open Field P63 1 minute intervals Distance travelled repeated measures Post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Within MS = 33993., df = 424.00 TIME	{1} 946.98	{2} 598.36	{3} 524.67	{4} 501.15	{5} 455.05
1	1. Distance moved (cm		0.00000	0.00002	0.00000	0.00001
2	2. Distance moved (cm	0.00000		0.02731	0.01006	0.00010
3	3. Distance moved (cm	0.00002	0.02731		0.48107	0.09282
4	4. Distance moved (cm	0.00000	0.01006	0.48107		0.16730
5	5. Distance moved (cm	0.00001	0.00010	0.09282	0.16730	
6	6. Distance moved (cm	0.00002	0.00001	0.00159	0.00949	0.12131
7	7. Distance moved (cm	0.00003	0.00002	0.00002	0.00016	0.01727
8	8. Distance moved (cm	0.00002	0.00002	0.00002	0.00013	0.01139
9	9. Distance moved (cm	0.00001	0.00003	0.00002	0.00004	0.00683

Cell No.	TIME	{6} 403.33	{7} 356.89	{8} 359.19	{9} 342.66
1	1. Distance moved (cm	0.00002	0.00003	0.00002	0.00001
2	2. Distance moved (cm	0.00001	0.00002	0.00002	0.00003
3	3. Distance moved (cm	0.00159	0.00002	0.00002	0.00002
4	4. Distance moved (cm	0.00949	0.00016	0.00013	0.00004
5	5. Distance moved (cm	0.12131	0.01727	0.01139	0.00683
6	6. Distance moved (cm		0.34557	0.18611	0.26505
7	7. Distance moved (cm	0.34557		0.94509	0.66990
8	8. Distance moved (cm	0.18611	0.94509		0.87363
9	9. Distance moved (cm	0.26505	0.66990	0.87363	

Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 33993., df = 424.00

A5.1.4.2.3.10.3. Open Field P63 1 minute intervals Inner Zone duration repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	3424.38	1	3424.38	65.3814	0.00000
MS	4.289	1	4.289	0.0818	0.77587
Running	66.004	1	66.004	1.2602	0.26667
Lesion	138.981	1	138.981	2.6535	0.10924
MS*Running	4.879	1	4.879	0.0931	0.76140
MS*Lesion	16.701	1	16.701	0.3188	0.57466
Running*Lesion	52.977	1	52.977	1.0114	0.31911
MS*Running*Lesion	92.900	1	92.900	1.7737	0.18862
Error	2775.897	53	52.375		
TIME	201.387	8	25.173	2.0988	0.03475
TIME*MS	88.509	8	11.064	0.9224	0.49752
TIME*Running	132.268	8	16.533	1.3785	0.20376
TIME*Lesion	73.052	8	9.132	0.7613	0.63713
TIME*MS*Running	102.762	8	12.845	1.0710	0.38235
TIME*MS*Lesion	86.894	8	10.862	0.9056	0.51156
TIME*Running*Lesion	149.875	8	18.734	1.5620	0.13414
TIME*MS*Running*Lesion	43.598	8	5.450	0.4543	0.88763
Error	5085.357	424	11.994		

Repeated Measures Analysis of Variance (P63 1 min timebins spreads
Sigma-restricted parameterization
Effective hypothesis decomposition

A5.1.4.2.3.10.4. Open Field P63 1 minute intervals Inner zone duration repeated measures Post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 11.994, df = 424.00

Cell No.	TIME	{1} 1.1038	{2} 2.1995	{3} 2.3142	{4} 2.4781	{5} 3.4426
1	1. Inner zone duration (		0.08061	0.13021	0.12552	0.00598
2	2. Inner zone duration (	0.08061		0.85480	0.89686	0.49379
3	3. Inner zone duration (	0.13021	0.85480		0.79378	0.54839
4	4. Inner zone duration (	0.12552	0.89686	0.79378		0.63954
5	5. Inner zone duration (	0.00598	0.49379	0.54839	0.63954	
6	6. Inner zone duration (	0.17463	0.96643	0.95675	0.98263	0.55183
7	7. Inner zone duration (	0.10002	0.93462	0.94128	0.95884	0.55348
8	8. Inner zone duration (	0.14838	0.96177	0.96082	0.97104	0.55836
9	9. Inner zone duration (	0.03220	0.78616	0.81402	0.86233	0.58003

Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 11.994, df = 424.00

Cell No.	TIME	{6} 2.4918	{7} 2.7923	{8} 2.6230	{9} 3.0956
1	1. Inner zone duration (	0.17463	0.10002	0.14838	0.03220
2	2. Inner zone duration (	0.96643	0.93462	0.96177	0.78616
3	3. Inner zone duration (	0.95675	0.94128	0.96082	0.81402
4	4. Inner zone duration (	0.98263	0.95884	0.97104	0.86233
5	5. Inner zone duration (	0.55183	0.55348	0.55836	0.58003
6	6. Inner zone duration (		0.88110	0.83434	0.77055
7	7. Inner zone duration (	0.88110		0.78709	0.62865
8	8. Inner zone duration (	0.83434	0.78709		0.73136
9	9. Inner zone duration (	0.77055	0.62865	0.73136	

A5.1.4.2.3.10.5. Open Field P63 1 minute intervals Inner zone Frequency repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (P63 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	970.1231	1	970.1231	81.6708(	0.00000(
MS	0.2156	1	0.2156	0.01815	0.893342
Running	17.5813	1	17.5813	1.4801(	0.229148
Lesion	16.3039	1	16.3039	1.3725(	0.246612
MS*Running	0.1835	1	0.1835	0.01545	0.901547
MS*Lesion	0.0136	1	0.0136	0.00115	0.973111
Running*Lesion	28.0894	1	28.0894	2.36474	0.130054
MS*Running*Lesion	17.5813	1	17.5813	1.4801(	0.229148
Error	629.5578	53	11.8784		
TIME	13.6766	8	1.7096	0.91748	0.501655
TIME*MS	18.0749	8	2.2594	1.21253	0.289812
TIME*Running	9.2333	8	1.1542	0.6194(	0.761708
TIME*Lesion	6.6219	8	0.8277	0.44422	0.894172
TIME*MS*Running	15.1704	8	1.8963	1.01769	0.421722
TIME*MS*Lesion	20.2441	8	2.5305	1.35805	0.213105
TIME*Running*Lesion	10.7394	8	1.3424	0.72044	0.673531
TIME*MS*Running*Lesion	17.2174	8	2.1522	1.15501	0.325276
Error	790.0573	424	1.8633		

A5.1.4.2.3.10.6. Open Field P63 1 minute intervals Maximum Velocity repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (P63 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2069362	1	2069362	1315.231	0.000000
MS	673	1	673	0.428	0.515787
Running	1319	1	1319	0.838	0.364088
Lesion	459	1	459	0.292	0.591359
MS*Running	1586	1	1586	1.008	0.319928
MS*Lesion	478	1	478	0.304	0.583667
Running*Lesion	186	1	186	0.118	0.732439
MS*Running*Lesion	1065	1	1065	0.677	0.414318
Error	83389	53	1573		
TIME	29209	8	3651	10.116	0.000000
TIME*MS	2008	8	251	0.695	0.695636
TIME*Running	1819	8	227	0.630	0.752734
TIME*Lesion	1691	8	211	0.586	0.789801
TIME*MS*Running	1782	8	223	0.617	0.763701
TIME*MS*Lesion	2259	8	282	0.782	0.618357
TIME*Running*Lesion	2102	8	263	0.728	0.666766
TIME*MS*Running*Lesion	2249	8	281	0.779	0.621592
Error	153028	424	361		

A5.1.4.2.3.10.7. Open Field P63 1 minute intervals Maximum velocity repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadsheet) Approximate Probabilities for Post Hoc Tests Error: Within MS = 360.92, df = 424.00 TIME	{1} 76.936	{2} 67.735	{3} 65.187	{4} 65.194	{5} 57.025
1	1. Velocity max (cm/s		0.00748	0.00356	0.00186	0.00002
2	2. Velocity max (cm/s	0.00748		0.73925	0.46025	0.01590
3	3. Velocity max (cm/s	0.00356	0.73925		0.99821	0.04647
4	4. Velocity max (cm/s	0.00186	0.46025	0.99821		0.08197
5	5. Velocity max (cm/s	0.00002	0.01590	0.04647	0.08197	
6	6. Velocity max (cm/s	0.00002	0.07959	0.09975	0.22544	0.46762
7	7. Velocity max (cm/s	0.00002	0.00401	0.02084	0.03241	0.61284
8	8. Velocity max (cm/s	0.00003	0.00143	0.01104	0.01580	0.67014
9	9. Velocity max (cm/s	0.00001	0.00143	0.01273	0.01709	0.79406

Cell No.	TIME	{6} 59.524	{7} 55.285	{8} 54.092	{9} 53.860
	Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadshe Approximate Probabilities for Post Hoc Tests Error: Within MS = 360.92, df = 424.00				
1	1. Velocity max (cm/s	0.00002	0.00002	0.00003	0.00001
2	2. Velocity max (cm/s	0.07959	0.00401	0.00143	0.00143
3	3. Velocity max (cm/s	0.09975	0.02084	0.01104	0.01273
4	4. Velocity max (cm/s	0.22544	0.03241	0.01580	0.01709
5	5. Velocity max (cm/s	0.46762	0.61284	0.67014	0.79406
6	6. Velocity max (cm/s		0.43400	0.39059	0.46749
7	7. Velocity max (cm/s	0.43400		0.72883	0.90979
8	8. Velocity max (cm/s	0.39059	0.72883		0.94621
9	9. Velocity max (cm/s	0.46749	0.90979	0.94621	

A5.1.4.2.3.10.8. Open Field P63 1 minute intervals Mean velocity repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
	Repeated Measures Analysis of Variance (P63 1 min timebins spreadsh Sigma-restricted parameterization Effective hypothesis decomposition				
Intercept	54730.20	1	54730.20	690.9838	0.000000
MS	53.45	1	53.45	0.6748	0.415062
Running	297.76	1	297.76	3.7593	0.057846
Lesion	6.90	1	6.90	0.0871	0.769027
MS*Running	47.69	1	47.69	0.6021	0.441236
MS*Lesion	94.97	1	94.97	1.1991	0.278458
Running*Lesion	8.65	1	8.65	0.1092	0.742317
MS*Running*Lesion	120.62	1	120.62	1.5229	0.222628
Error	4197.93	53	79.21		
TIME	6986.42	8	873.30	64.2266	0.000000
TIME*MS	166.90	8	20.86	1.5343	0.143118
TIME*Running	130.51	8	16.31	1.1997	0.297441
TIME*Lesion	33.47	8	4.18	0.3077	0.963051
TIME*MS*Running	87.59	8	10.95	0.8052	0.598247
TIME*MS*Lesion	116.86	8	14.61	1.0743	0.379972
TIME*Running*Lesion	58.61	8	7.33	0.5388	0.827289
TIME*MS*Running*Lesion	52.78	8	6.60	0.4852	0.866787
Error	5765.22	424	13.60		

A5.1.4.2.3.10.9. Open Field P63 1 minute intervals Mean velocity repeated measures post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadsheet)
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 13.597, df = 424.00

Cell No.	TIME	{1} 18.940	{2} 11.967	{3} 10.493	{4} 10.023	{5} 9.1010
1	1. Velocity mean (cm/s		0.00000	0.00002	0.00000	0.00001
2	2. Velocity mean (cm/s	0.00000		0.02731	0.01006	0.00010
3	3. Velocity mean (cm/s	0.00002	0.02731		0.48107	0.09282
4	4. Velocity mean (cm/s	0.00000	0.01006	0.48107		0.16730
5	5. Velocity mean (cm/s	0.00001	0.00010	0.09282	0.16730	
6	6. Velocity mean (cm/s	0.00002	0.00001	0.00159	0.00949	0.12131
7	7. Velocity mean (cm/s	0.00003	0.00002	0.00002	0.00016	0.01727
8	8. Velocity mean (cm/s	0.00002	0.00002	0.00002	0.00013	0.01139
9	9. Velocity mean (cm/s	0.00001	0.00003	0.00002	0.00004	0.00683

Newman-Keuls test; variable DV_1 (P63 1 min timebins spreadshe
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 13.597, df = 424.00

Cell No.	TIME	{6} 8.0665	{7} 7.1377	{8} 7.1837	{9} 6.8531
1	1. Velocity mean (cm/s	0.00002	0.00003	0.00002	0.00001
2	2. Velocity mean (cm/s	0.00001	0.00002	0.00002	0.00003
3	3. Velocity mean (cm/s	0.00159	0.00002	0.00002	0.00002
4	4. Velocity mean (cm/s	0.00949	0.00016	0.00013	0.00004
5	5. Velocity mean (cm/s	0.12131	0.01727	0.01139	0.00683
6	6. Velocity mean (cm/s		0.34557	0.18611	0.26505
7	7. Velocity mean (cm/s	0.34557		0.94509	0.66991
8	8. Velocity mean (cm/s	0.18611	0.94509		0.87363
9	9. Velocity mean (cm/s	0.26505	0.66991	0.87363	

A5.1.4.3.1. Open Field P49 and P63 Distance travelled Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Repeated measures sprea Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	3.698239E+0	1	3.698239E+0	1993.14	0.00000
MS	6.837524E+0	1	6.837524E+0	3.685	0.06039
Running	3.144443E+0	1	3.144443E+0	16.947	0.00013
Lesion	1.232065E+0	1	1.232065E+0	0.664	0.41886
MS*Running	9.547297E+0	1	9.547297E+0	0.005	0.94309
MS*Lesion	2.511111E+0	1	2.511111E+0	1.353	0.25000
Running*Lesion	3.590879E+0	1	3.590879E+0	0.194	0.66182
MS*Running*Lesion	9.434661E+0	1	9.434661E+0	0.508	0.47898
Error	9.648517E+0	52	1.855484E+0		
TIME	7.798014E+0	1	7.798014E+0	73.432	0.00000
TIME*MS	9.369921E+0	1	9.369921E+0	0.882	0.35190
TIME*Running	2.397575E+0	1	2.397575E+0	2.258	0.13899
TIME*Lesion	4.082301E+0	1	4.082301E+0	0.384	0.53795
TIME*MS*Running	1.529922E+0	1	1.529922E+0	1.441	0.23546
TIME*MS*Lesion	1.009211E+0	1	1.009211E+0	0.950	0.33414
TIME*Running*Lesion	3.218003E+0	1	3.218003E+0	0.030	0.86248
TIME*MS*Running*Lesion	1.596994E+0	1	1.596994E+0	1.504	0.22560
Error	5.522090E+0	52	1.061940E+0		

A5.1.4.3.2. Open Field P49 and P63 Distance travelled repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 1062E3, df = 52.000 TIME	{1} 6346.3	{2} 4741.5
1	P49 Distance moved Total (cm)		0.000114
2	P63 Distance moved Total (cm	0.000114	

A5.1.4.3.3. Open Field P49 and P63 Inner Zone duration Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Repeated measures sprea Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	108012.:	1	108012.:	168.709	0.00000
MS	118.9	1	118.9	0.185	0.66834
Running	1791.2	1	1791.2	2.797	0.10039
Lesion	1049.2	1	1049.2	1.638	0.20618
MS*Running	316.6	1	316.6	0.494	0.48506
MS*Lesion	18.3	1	18.3	0.028	0.86634
Running*Lesion	376.2	1	376.2	0.587	0.44680
MS*Running*Lesion	105.8	1	105.8	0.165	0.68606
Error	33291.7	52	640.2		
TIME	5392.5	1	5392.5	19.565	0.00005
TIME*MS	5.8	1	5.8	0.021	0.88485
TIME*Running	2.7	1	2.7	0.009	0.92110
TIME*Lesion	63.0	1	63.0	0.228	0.63466
TIME*MS*Running	946.2	1	946.2	3.433	0.06957
TIME*MS*Lesion	227.6	1	227.6	0.826	0.36763
TIME*Running*Lesion	159.1	1	159.1	0.577	0.45086
TIME*MS*Running*Lesion	440.3	1	440.3	1.597	0.21187
Error	14331.8	52	275.6		

A5.1.4.3.4. Open Field P49 and P63 Inner zone duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 275.61, df = 52.000 TIME	{1} 36.865	{2} 23.439
1	P49In zone Inner zone duration (		0.00015
2	P63 In zone Inner zone duration (	0.00015	

A5.1.4.3.5. Open Field P49 and P63 Inner zone frequency repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Repeated measures sprea Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	28349.5	1	28349.5	225.519	0.00000
MS	0.82	1	0.82	0.006	0.93607
Running	241.32	1	241.32	1.9197	0.17180
Lesion	296.36	1	296.36	2.3575	0.13074
MS*Running	136.86	1	136.86	1.088	0.30157
MS*Lesion	0.01	1	0.01	0.000	0.99246
Running*Lesion	140.42	1	140.42	1.117(	0.29544
MS*Running*Lesion	59.53	1	59.53	0.473	0.49442
Error	6536.8(	52	125.71		
TIME	1549.8	1	1549.8	26.202	0.00000
TIME*MS	0.32	1	0.32	0.005	0.94207
TIME*Running	6.36	1	6.36	0.107(	0.74425
TIME*Lesion	27.18	1	27.18	0.459	0.50088
TIME*MS*Running	235.33	1	235.33	3.978	0.05134
TIME*MS*Lesion	6.58	1	6.58	0.111	0.74004
TIME*Running*Lesion	57.55	1	57.55	0.972	0.32852
TIME*MS*Running*Lesion	31.13	1	31.13	0.526	0.47142
Error	3075.8	52	59.15		

A5.1.4.3.6. Open Field P49 and P63 Inner zone frequency repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 59.151, df = 52.000 TIME	{1} 19.167	{2} 11.833
1	P49 In zone Inner zone frequency		0.000116
2	P63 In zone Inner zone frequen	0.000116	

A5.1.4.3.7. Open Field P49 and P63 Maximum Velocity Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Repeated measures sprea Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	187406	1	187406	177.807	0.00000
MS	219	1	219	0.0208	0.88600
Running	1942	1	1942	1.842	0.18049
Lesion	3853	1	3853	3.656	0.06138
MS*Running	1213	1	1213	1.151	0.28823
MS*Lesion	188	1	188	0.178	0.67446
Running*Lesion	487	1	487	0.462	0.49961
MS*Running*Lesion	244	1	244	0.231	0.63237
Error	54807	52	1054		
TIME	16069	1	16069	14.853	0.00032
TIME*MS	314	1	314	0.290	0.59199
TIME*Running	780	1	780	0.721	0.39963
TIME*Lesion	2518	1	2518	2.328	0.13310
TIME*MS*Running	1561	1	1561	1.443	0.23501
TIME*MS*Lesion	178	1	178	0.016	0.89837
TIME*Running*Lesion	676	1	676	0.062	0.80358
TIME*MS*Running*Lesion	452	1	452	0.041	0.83885
Error	56255	52	1081		

A5.1.4.3.8. Open Field P49 and P63 Maximum velocity Repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 10818., df = 52.000 TIME	{1} 162.37	{2} 88.805
1	P49 Velocity Maximum (cm/		0.000411
2	P63 Velocity Maximum (cm/	0.000411	

A5.1.4.3.9. Open Field P49 and P63 Mean Velocity Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Repeated measures sprea Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	15021.5	1	15021.5	2000.50	0.00000
MS	27.81	1	27.81	3.703	0.05978
Running	128.8	1	128.8	17.155	0.00012
Lesion	5.46	1	5.46	0.727	0.39783
MS*Running	0.04	1	0.04	0.006	0.93886
MS*Lesion	9.65	1	9.65	1.285	0.26208
Running*Lesion	1.25	1	1.25	0.167	0.68445
MS*Running*Lesion	4.08	1	4.08	0.544	0.46412
Error	390.46	52	7.51		
TIME	331.7	1	331.7	75.477	0.00000
TIME*MS	3.88	1	3.88	0.882	0.35194
TIME*Running	10.26	1	10.26	2.334	0.13260
TIME*Lesion	1.93	1	1.93	0.439	0.51055
TIME*MS*Running	6.10	1	6.10	1.388	0.24417
TIME*MS*Lesion	4.38	1	4.38	0.996	0.32287
TIME*Running*Lesion	0.20	1	0.20	0.045	0.83282
TIME*MS*Running*Lesion	6.07	1	6.07	1.381	0.24521
Error	228.53	52	4.39		

A5.1.4.3.10. Open Field P49 and P63 Mean velocity Repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 4.3949, df = 52.000 TIME	{1} 12.828	{2} 9.5182
1	P49 Velocity Mean (cm/		0.00011
2	P63 Velocity Mean (cm/	0.00011	

A5.1.4.4.1.1.1. Open Field P49 Non-MS only Full Ten Minutes Descriptive Statistics

Effect	Descriptive Statistics (Open field 10 minutes P49) Include condition: MS=0							
	Level c Factor	Level of Factor	N	Distance moved Total (cm Mean	Distance moved Total (cm Std.Dev.	Distance moved Total (cm Std.Err	Distance moved Total (cm -95.00%	Distance moved Total (cm) +95.00%
Total			31	6018.11	1323.19	237.652	5532.76	6503.46
Running	0		14	6846.83	1088.63	290.950	6218.27	7475.39
Running	1		17	5335.64	1106.38	268.338	4766.79	5904.49
Lesion	0		16	6210.17	1050.14	262.535	5650.59	6769.75
Lesion	1		15	5813.25	1575.78	406.865	4940.61	6685.89
Running*Lesi	0	0	7	6995.70	963.818	364.289	6104.32	7887.08
Running*Lesi	0	1	7	6697.96	1259.81	476.164	5532.83	7863.09
Running*Lesi	1	0	9	5599.21	641.228	213.742	5106.32	6092.10
Running*Lesi	1	1	8	5039.13	1462.26	516.988	3816.65	6261.61

Effect	Descriptive Statistics (Open field 10 minutes P49) Include condition: MS=0							
	Level c Factor	Level of Factor	N	In zone Inner zone duration (s) Mean	In zone Inner zone duration (s) Std.Dev.	In zone Inner zone duration (s) Std.Err	In zone Inner zone duration (s) -95.00%	In zone Inner zone duration (s) +95.00%
Total			31	37.5190	23.0310	4.13652	29.0711	45.9668
Running	0		14	46.7713	27.7453	7.41526	30.7516	62.7910
Running	1		17	29.8994	15.2479	3.69817	22.0596	37.7392
Lesion	0		16	38.6439	16.1655	4.04138	30.0299	47.2579
Lesion	1		15	36.3191	29.2174	7.54391	20.1390	52.4991
Running*Lesi	0	0	7	46.4180	19.8068	7.48627	28.0998	64.7363
Running*Lesi	0	1	7	47.1246	35.7114	13.4976	14.0970	80.1522
Running*Lesi	1	0	9	32.5973	10.0864	3.36215	24.8442	40.3505
Running*Lesi	1	1	8	26.8642	19.8814	7.02915	10.2429	43.4855

Effect	Descriptive Statistics (Open field 10 minutes P49) Include condition: MS=0							
	Level c Factor	Level of Factor	N	In zone Inner zone frequency Mean	In zone Inner zone frequency Std.Dev.	In zone Inner zone frequency Std.Err	In zone Inner zone frequency -95.00%	In zone Inner zone frequency +95.00%
Total			31	18.8064	9.7242	1.74652	15.2395	22.3733
Running	0		14	22.7857	10.9907	2.93740	16.4398	29.1315
Running	1		17	15.5294	7.3409	1.78044	11.7550	19.3037
Lesion	0		16	20.5000	7.0804	1.77012	16.7270	24.2729
Lesion	1		15	17.0000	11.9223	3.07834	10.3976	23.6023
Running*Lesi	0	0	7	24.4285	8.1005	3.06172	16.9368	31.9203
Running*Lesi	0	1	7	21.1428	13.7771	5.20726	8.4011	33.8845
Running*Lesi	1	0	9	17.4444	4.5582	1.51942	13.9406	20.9482
Running*Lesi	1	1	8	13.3750	9.4557	3.34310	5.4698	21.2801

Effect	Descriptive Statistics (Open field 10 minutes P49) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Velocity Maximum (cm/s) Mean	Velocity Maximum (cm/s) Std.Dev.	Velocity Maximum (cm/s) Std.Err	Velocity Maximum (cm/s) -95.00%	Velocity Maximum (cm/s) +95.00%
Total			31	157.363	160.380	28.8051	98.5350	216.191
Running	0		14	155.758	138.383	36.9844	75.8583	235.658
Running	1		17	158.684	180.735	43.8346	65.7592	251.610
Lesion	0		16	193.013	209.947	52.4869	81.1398	304.886
Lesion	1		15	119.336	69.928	18.0554	80.6113	158.061
Running*Lesi	0	0	7	205.083	174.536	65.9686	43.6641	366.502
Running*Lesi	0	1	7	106.433	73.154	27.6496	38.7769	174.089
Running*Lesi	1	0	9	183.625	244.074	81.3583	-3.9874	371.237
Running*Lesi	1	1	8	130.626	69.862	24.7001	72.2200	189.033

Effect	Descriptive Statistics (Open field 10 minutes P49) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Velocity Mean (cm/s) Mean	Velocity Mean (cm/s) Std.Dev.	Velocity Mean (cm/s) Std.Err	Velocity Mean (cm/s) -95.00%	Velocity Mean (cm/s) +95.00%
Total			31	12.1635	2.68918	0.48299	11.1771	13.1499
Running	0		14	13.8439	2.20310	0.58880	12.5718	15.1159
Running	1		17	10.7796	2.26063	0.54828	9.6173	11.9419
Lesion	0		16	12.5517	2.16762	0.54190	11.3966	13.7067
Lesion	1		15	11.7494	3.17905	0.82082	9.9889	13.5099
Running*Lesion	0	0	7	14.1773	1.94997	0.73702	12.3739	15.9808
Running*Lesion	0	1	7	13.5104	2.54054	0.96023	11.1608	15.8600
Running*Lesion	1	0	9	11.2873	1.35910	0.45303	10.2426	12.3320
Running*Lesion	1	1	8	10.2085	2.97756	1.05272	7.7192	12.6978

A5.1.4.4.1.1.2. Open Field P49 Non-MS only Full Ten Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for Distance moved Total (cm) (Open field 10 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	1.134569E+0	1	1.134569E+0	918.449	0.00000
Running	1.788909E+0	1	1.788909E+0	14.481	0.00073
Lesion	1.410160E+0	1	1.410160E+0	1.141	0.29478
Running*Lesion	1.318890E+0	1	1.318890E+0	0.106	0.74637
Error	3.335335E+0	27	1.235309E+0		

A5.1.4.4.1.1.3. Open Field P49 Non-MS only Full Ten Minutes Distance travelled post hoc ANOVA (Running effect)

Newman-Keuls test; variable Distance moved Total (cm) (Open field 10 minute
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 1235E3, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 6846.8	{2} 5335.6
1	0		0.000946
2	1	0.000946	

A5.1.4.4.1.1.4. Open Field P49 Non-MS only Full Ten Minutes Inner zone duration ANOVA

Univariate Tests of Significance for In zone Inner zone duration (s) (Open field
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	44862.3	1	44862.3	89.1534	0.00000
Running	2225.8	1	2225.8	4.4234	0.04490
Lesion	48.42	1	48.42	0.0962	0.75879
Running*Lesion	79.47	1	79.47	0.1579	0.69419
Error	13586.5	27	503.20		

A5.1.4.4.1.1.5. Open Field P49 Non-MS only Full Ten Minutes Inner zone duration post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable In zone Inner zone duration (s) (Open field 10 minut
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 503.20, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 46.771	{2} 29.899
1	0		0.046874
2	1	0.046874	

A5.1.4.4.1.1.6. Open Field P49 Non-MS only Full Ten Minutes Inner zone Frequency ANOVA

Univariate Tests of Significance for In zone Inner zone frequency (Open field
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	11182.9	1	11182.9	129.885	0.00000
Running	417.04	1	417.04	4.8437	0.03648
Lesion	103.67	1	103.67	1.2041	0.28219
Running*Lesion	1.18	1	1.18	0.0137	0.90778
Error	2324.6	27	86.10		

A5.1.4.4.1.1.7. Open Field P49 Non-MS only Full Ten Minutes Inner zone Frequency post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable In zone Inner zone frequency (Open field 10 minut
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 86.099, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 22.786	{2} 15.529
1	0		0.03935
2	1	0.03935	

A5.1.4.4.1.1.8. Open Field P49 Non-MS only Full Ten Minutes Maximum Velocity ANOVA

Univariate Tests of Significance for Velocity Maximum (cm/s) (Open field 10 m
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	750416.	1	750416.	27.9221	0.00001
Running	14.3	1	14.3	0.0005	0.98174
Lesion	44071.(	1	44071.(	1.6398	0.21124
Running*Lesion	3993.8	1	3993.8	0.1486	0.70289
Error	725633.	27	26875.		

A5.1.4.4.1.1.9. Open Field P49 Non-MS only Full Ten Minutes Mean Velocity ANOVA

Univariate Tests of Significance for Velocity Mean (cm/s) (Open field 10 minut
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4635.72	1	4635.72	904.503	0.00000
Running	73.47	1	73.47	14.335	0.00077
Lesion	5.84(	1	5.84(	1.139	0.29521
Running*Lesion	0.325	1	0.325	0.063	0.80307
Error	138.37	27	5.125		

A5.1.4.4.1.1.10. Open Field P49 Non-MS only Full Ten Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Velocity Mean (cm/s) (Open field 10 minutes
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 5.1252, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 13.844	{2} 10.780
1	0		0.00098
2	1	0.00098	

A5.1.4.4.1.2.1. Open Field P49 Five Minute Intervals First Five Minutes Descriptive Statistics

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total			31	3429.00	788.83	141.679	3139.65	3718.35
Running	0		14	3793.04	653.07	174.541	3415.97	4170.11
Running	1		17	3129.20	780.22	189.232	2728.05	3530.35
Lesion	0		16	3490.05	565.74	141.436	3188.58	3791.51
Lesion	1		15	3363.88	990.80	255.824	2815.19	3912.57
Running*Lesion	0	0	7	3859.53	589.72	222.895	3314.13	4404.94
Running*Lesion	0	1	7	3726.55	752.32	284.353	3030.76	4422.34
Running*Lesion	1	0	9	3202.67	356.27	118.756	2928.82	3476.52
Running*Lesion	1	1	8	3046.55	1109.78	392.368	2118.74	3974.35

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s) -95.00%	1. Inner zone duration (s) +95.00%
Total			31	15.4729	10.7305	1.92725	11.5369	19.4089
Running	0		14	18.4616	13.0298	3.48238	10.9384	25.9849
Running	1		17	13.0116	7.9811	1.93570	8.9081	17.1151
Lesion	0		16	15.7310	9.2892	2.32232	10.7811	20.6809
Lesion	1		15	15.1976	12.4147	3.20547	8.3225	22.0726
Running*Lesion	0	0	7	17.6615	10.6729	4.03400	7.7907	27.5324
Running*Lesion	0	1	7	19.2617	15.8885	6.00531	4.5673	33.9562
Running*Lesion	1	0	9	14.2295	8.4002	2.80007	7.7725	20.6865
Running*Lesion	1	1	8	11.6414	7.8037	2.75904	5.1173	18.1655

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total			31	8.29032	4.94768	0.88863	6.47549	10.1051
Running	0		14	9.21428	5.80687	1.55195	5.86149	12.5670
Running	1		17	7.52941	4.14001	1.00410	5.40081	9.6580
Lesion	0		16	8.68750	4.61474	1.15368	6.22847	11.1465
Lesion	1		15	7.86666	5.40986	1.39682	4.87078	10.8625
Running*Lesion	0	0	7	9.42857	5.82686	2.20234	4.03961	14.8175
Running*Lesion	0	1	7	9.00000	6.24499	2.36038	3.22434	14.7756
Running*Lesion	1	0	9	8.11111	3.68932	1.22977	5.27524	10.9469
Running*Lesion	1	1	8	6.87500	4.76407	1.68435	2.89213	10.8578

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total			31	102.336	69.1544	12.4205	76.9705	127.702
Running	0		14	109.035	70.2633	18.7786	68.4666	149.604
Running	1		17	96.819	69.8857	16.9497	60.8879	132.751
Lesion	0		16	107.709	71.9173	17.9793	69.3875	146.031
Lesion	1		15	96.605	68.1039	17.5843	58.8908	134.320
Running*Lesion	0	0	7	114.942	70.8643	26.7842	49.4037	180.480
Running*Lesion	0	1	7	103.128	74.7899	28.2679	33.9595	172.297
Running*Lesion	1	0	9	102.084	76.4852	25.4950	43.2922	160.875
Running*Lesion	1	1	8	90.897	66.3479	23.4575	35.4294	146.366

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total			31	13.8586	3.17009	0.56936	12.6958	15.0214
Running	0		14	15.3337	2.58639	0.69124	13.8404	16.8271
Running	1		17	12.6438	3.15209	0.76449	11.0231	14.2645
Lesion	0		16	14.1035	2.28182	0.57045	12.8876	15.3194
Lesion	1		15	13.5974	3.97672	1.02678	11.3951	15.7996
Running*Lesion	0	0	7	15.6377	2.31306	0.87425	13.4985	17.7770
Running*Lesion	0	1	7	15.0297	2.98795	1.12934	12.2663	17.7931
Running*Lesion	1	0	9	12.9102	1.44510	0.48170	11.7994	14.0210
Running*Lesion	1	1	8	12.3441	4.48659	1.58624	8.5932	16.0950

A5.1.4.4.1.2.2. Open Field P49 Non-MS only Five Minute Intervals 2nd Five minutes Descriptive Stats

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total			31	2584.59	750.901	134.865	2309.15	2860.02
Running	0		14	3052.48	547.971	146.451	2736.09	3368.87
Running	1		17	2199.26	681.129	165.198	1849.06	2549.47
Lesion	0		16	2716.88	579.734	144.933	2407.96	3025.79
Lesion	1		15	2443.48	898.233	231.922	1946.05	2940.90
Running*Lesion	0	0	7	3135.49	478.971	181.034	2692.52	3578.47
Running*Lesion	0	1	7	2969.47	636.473	240.564	2380.83	3558.11
Running*Lesion	1	0	9	2391.29	430.719	143.573	2060.21	2722.37
Running*Lesion	1	1	8	1983.23	864.675	305.708	1260.35	2706.12

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total			31	21.9856	13.9364	2.50306	16.8737	27.0976
Running	0		14	28.2067	15.6786	4.19029	19.1541	37.2592
Running	1		17	16.8624	10.1337	2.45779	11.6521	22.0727
Lesion	0		16	22.8495	9.2037	2.30093	17.9452	27.7538
Lesion	1		15	21.0641	17.9909	4.64524	11.1011	31.0272
Running*Lesion	0	0	7	28.6468	11.0794	4.18763	18.4000	38.8936
Running*Lesion	0	1	7	27.7665	20.2337	7.64762	9.0534	46.4796
Running*Lesion	1	0	9	18.3405	3.8057	1.26859	15.4151	21.2659
Running*Lesion	1	1	8	15.1995	14.5672	5.15028	3.0210	27.3780

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total			31	10.5483	5.90389	1.06037	8.3828	12.7139
Running	0		14	13.7142	6.14477	1.64226	10.1664	17.2621
Running	1		17	7.9411	4.32247	1.04835	5.7187	10.1635
Lesion	0		16	11.8750	4.37987	1.09497	9.5411	14.2088
Lesion	1		15	9.1333	7.06972	1.82539	5.2182	13.0484
Running*Lesion	0	0	7	15.1428	3.84831	1.45452	11.5837	18.7019
Running*Lesion	0	1	7	12.2857	7.88911	2.98180	4.9895	19.5819
Running*Lesion	1	0	9	9.3333	2.87228	0.95742	7.1255	11.5411
Running*Lesion	1	1	8	6.3750	5.28981	1.87023	1.9526	10.7974

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total			31	145.611	163.524	29.3697	85.630	205.592
Running	0		14	153.055	139.475	37.2762	72.525	233.586
Running	1		17	139.480	185.050	44.8812	44.337	234.624
Lesion	0		16	187.813	212.023	53.0058	74.834	300.792
Lesion	1		15	100.596	70.205	18.1270	61.717	139.474
Running*Lesion	0	0	7	204.979	174.622	66.0012	43.480	366.478
Running*Lesion	0	1	7	101.131	73.244	27.6838	33.392	168.871
Running*Lesion	1	0	9	174.461	246.901	82.3004	-15.323	364.247
Running*Lesion	1	1	8	100.127	72.517	25.6387	39.501	160.753

Effect	Descriptive Statistics (P49 Open field 5 min timebins spreadsheet) Include condition: MS=0 Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total			31	10.4569	3.07175	0.55170	9.3302	11.5837
Running	0		14	12.3564	2.27656	0.60843	11.0419	13.6708
Running	1		17	8.8927	2.77925	0.67406	7.4637	10.3217
Lesion	0		16	10.9938	2.42339	0.60584	9.7024	12.2851
Lesion	1		15	9.8843	3.63954	0.93972	7.8688	11.8998
Running*Lesion	0	0	7	12.7215	2.01423	0.76130	10.8586	14.5843
Running*Lesion	0	1	7	11.9913	2.61937	0.99003	9.5688	14.4138
Running*Lesion	1	0	9	9.6500	1.82361	0.60787	8.2483	11.0518
Running*Lesion	1	1	8	8.0407	3.50538	1.23934	5.1101	10.9713

A5.1.4.4.1.2.3. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P49 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	36681999	1	36681999	655.059	0.00000
Running	342492	1	342492	6.116	0.01998
Lesion	160175	1	160175	0.286	0.59714
Running*Lesion	1026	1	1026	0.001	0.96617
Error	1511945	27	55998		

A5.1.4.4.1.2.4. Open Field P49 Non-MS only Five Minute Time-bins First Five minutes Distance travelled post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 1. Distance moved (cm) (P49 Open field 5 min timebins sp Approximate Probabilities for Post Hoc Tests Error: Between MS = 5600E2, df = 27.000 Include condition: MS=0 Running	{1} 3793.0	{2} 3129.2
1	0		0.02080
2	1	0.02080	

A5.1.4.4.1.2.5. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Inner Zone duration ANOVA

	Univariate Tests of Significance for 1. Inner zone duration (s) (P49 Open field Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	7556.41	1	7556.41	63.9781	0.00000
Running	234.09	1	234.09	1.9819	0.17059
Lesion	1.87	1	1.87	0.0158	0.90079
Running*Lesion	33.61	1	33.61	0.2846	0.59805
Error	3188.95	27	118.10		

A5.1.4.4.1.2.6. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Inner zone frequency ANOVA

	Univariate Tests of Significance for 1. Inner Zone frequency (P49 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2139.68	1	2139.68	81.8897	0.00000
Running	22.71	1	22.71	0.8691	0.35945
Lesion	5.311	1	5.311	0.2032	0.65571
Running*Lesion	1.25	1	1.25	0.0478	0.82853
Error	705.47	27	26.12		

A5.1.4.4.1.2.7. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for 1. Velocity max (cm/s) (P49 Open field 5 n Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	323795.	1	323795.	61.8690	0.00000
Running	1206.3	1	1206.3	0.2304	0.63502
Lesion	1013.7	1	1013.7	0.1937	0.66335
Running*Lesion	0.8	1	0.8	0.0001	0.99051
Error	141306.	27	5233.6		

A5.1.4.4.1.2.8. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Mean Velocity ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	5992.92	1	5992.92	665.108	0.00000
Running	56.153	1	56.153	6.232(	0.01895
Lesion	2.642	1	2.642	0.293	0.59259
Running*Lesion	0.003	1	0.003	0.000	0.98473
Error	243.28	27	9.01(		

Univariate Tests of Significance for 1. Velocity mean (cm/s) (P49 Open field 5
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.9. Open Field P49 Non-MS only Five Minute Time-bins First Five Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Running	{1} 15.334	{2} 12.644
1	0		0.01967
2	1	0.01967	

Newman-Keuls test; variable 1. Velocity mean (cm/s) (P49 Open field 5 min timebins s
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 9.0104, df = 27.000
Include condition: MS=0

A5.1.4.4.1.2.10. Open Field P49 Non-MS only Five Minute Time-bins Second Five Minutes Distance travelled ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	21045329	1	21045329	539.886	0.00000
Running	573838	1	573838	14.721(	0.00068
Lesion	63155	1	63155	1.620	0.21392
Running*Lesion	11226(	1	11226(	0.288(	0.59590
Error	1052487	27	38981(		

Univariate Tests of Significance for 2. Distance moved (cm) (P49 Open field 5
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.11. Open Field P49 Non-MS only Five Minute Time-bins Second Five Minutes Distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Distance moved (cm) (P49 Open field 5 min timebins sp
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 3898E2, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 3052.5	{2} 2199.3
1	0		0.00090
2	1	0.00090	

A5.1.4.4.1.2.12. Open Field P49 Non-MS only Five Minute Time-bins Second five minutes Inner zone duration ANOVA

Univariate Tests of Significance for 2. Inner zone duration (s) (P49 Open field
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	15506.4	1	15506.4	87.3284	0.00000
Running	1002.6	1	1002.6	5.6464	0.02484
Lesion	30.99	1	30.99	0.1745	0.67942
Running*Lesion	9.79	1	9.79	0.0551	0.81609
Error	4794.2	27	177.56		

A5.1.4.4.1.2.13. Open Field P49 Non-MS only Five Minute Time-bins Second Five minutes Inner Zone post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 2. Inner zone duration (s) (P49 Open field 5 min timebins
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 177.56, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 28.207	{2} 16.862
1	0		0.02594
2	1	0.02594	

A5.1.4.4.1.2.14. Open Field P49 Non-MS only Five Minute Time-bins Second Five minutes Frequency of entry into inner zone ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	3565.92	1	3565.92	132.954	0.00000
Running	263.23	1	263.23	9.814	0.00413
Lesion	64.81	1	64.81	2.416	0.13171
Running*Lesion	0.02	1	0.02	0.000	0.97862
Error	724.16	27	26.82		

Univariate Tests of Significance for 2. Inner Zone frequency (P49 Open field 5
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.15. Open Field P49 Non-MS only Five Minute Time-bins Second Five Minutes Frequency of Entry into Inner Zone post hoc Newman Keuls (Running effect)

Cell No.	Running	{1} 13.714	{2} 7.9412
1	0		0.00477
2	1	0.00477	

Newman-Keuls test; variable 2. Inner Zone frequency (P49 Open field 5 min timebins s
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 26.821, df = 27.000
Include condition: MS=0

A5.1.4.4.1.2.16. Open Field P49 Non-MS only Five Minute Time-bins Second Five minutes Maximum Velocity ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	646218.	1	646218.	23.5896	0.00004
Running	1904.2	1	1904.2	0.0695	0.79405
Lesion	60841.8	1	60841.8	2.2209	0.14773
Running*Lesion	1669.2	1	1669.2	0.0609	0.80689
Error	739641.	27	27394.		

Univariate Tests of Significance for 2. Velocity max (cm/s) (P49 Open field 5 n
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.17. Open Field P49 Non-MS only Five Minutes Time bins Second Five Minutes Mean Velocity ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	3445.73	1	3445.73	522.290	0.00000
Running	94.493	1	94.493	14.322	0.00078
Lesion	10.488	1	10.488	1.589	0.21814
Running*Lesion	1.481	1	1.481	0.224	0.63942
Error	178.128	27	6.597		

Univariate Tests of Significance for 2. Velocity mean (cm/s) (P49 Open field 5
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.18. Open Field P49 Non-MS only Five Minutes Time-bins Second Five Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Running	{1} 12.356	{2} 8.8927
1	0		0.00101
2	1	0.00101	

Newman-Keuls test; variable 2. Velocity mean (cm/s) (P49 Open field 5 min timebins s
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 6.5974, df = 27.000
Include condition: MS=0

A5.1.4.4.1.2.19. Open Field P49 Non-MS Only Five Minute Intervals Distance Travelled Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	56648277	1	56648277	919.916	0.00000
Running	901488	1	901488	14.639	0.00070
Lesion	71391	1	71391	1.159	0.29113
Running*Lesion	6737	1	6737	0.109	0.74337
Error	1662654	27	61579		
TIME	1079050	1	1079050	32.307	0.00000
TIME*Running	14842	1	14842	0.444	0.51066
TIME*Lesion	7780	1	7780	0.233	0.63322
TIME*Running*Lesion	4591	1	4591	0.137	0.71370
Error	901777	27	33399		

Repeated Measures Analysis of Variance (P49 Open field 5 min timebins
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

A5.1.4.4.1.2.20. Open Field P49 Non-MS Only Five Minute Intervals Distance Travelled Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 3340E2, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 3429.0	{2} 2584.6
1	1. Distance moved (cm		0.000146
2	2. Distance moved (cm	0.000146	

A5.1.4.4.1.2.21. Open Field P49 Non-MS only Five Minute Intervals Inner Zone duration Repeated Measures ANOVA

Repeated Measures Analysis of Variance (P49 Open field 5 min timebins
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	22356.0	1	22356.0	89.1322	0.00000
Running	1102.8	1	1102.8	4.3968	0.04550
Lesion	24.04	1	24.04	0.0958	0.75923
Running*Lesion	39.85	1	39.85	0.1588	0.69332
Error	6772.1	27	250.82		
TIME	706.77	1	706.77	15.7568	0.00048
TIME*Running	133.89	1	133.89	2.9849	0.09546
TIME*Lesion	8.82	1	8.82	0.1965	0.66104
TIME*Running*Lesion	3.56	1	3.56	0.0793	0.78029
Error	1211.08	27	44.85		

A5.1.4.4.1.2.22. Open Field P49 Non-MS only Five Minute Intervals Inner Zone Duration Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 44.855, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 15.473	{2} 21.986
1	1. Inner zone duration (s)		0.000827
2	2. Inner zone duration (s	0.000827	

A5.1.4.4.1.2.23. Open Field P49 Non-MS only Five Minute Intervals Frequency of Entry into Inner zone repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	5615.04	1	5615.04	130.533	0.00000
Running	220.29	1	220.29	5.121	0.03188
Lesion	53.613	1	53.613	1.246	0.27409
Running*Lesion	0.791	1	0.791	0.018	0.89312
Error	1161.43	27	43.016		
TIME	90.568	1	90.568	9.117	0.00547
TIME*Running	65.656	1	65.656	6.609	0.01597
TIME*Lesion	16.508	1	16.508	1.661	0.20828
TIME*Running*Lesion	0.478	1	0.478	0.048	0.82800
Error	268.20	27	9.934		

A5.1.4.4.1.2.24. Open Field P49 Non-MS Only Five Minute Intervals Frequency of Entry into the Inner zone Repeated measures post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 8.2903	{2} 10.548
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 9.9336, df = 27.000 Include condition: MS=0			
1	1. Inner Zone frequency		0.009018
2	2. Inner Zone frequenc	0.009018	

A5.1.4.4.1.2.25. Open Field P49 Non-MS Only Five Minute Intervals Frequency of Entry into the Inner zone Repeated measures post hoc Newman Keuls test (Time*Running)

Cell No.	Running	TIME	{1} 9.2143	{2} 13.714	{3} 7.5294	{4} 7.9412
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 26.475, df = 38.839 Include condition: MS=0						
1	0	1. Inner Zone frequency		0.000622	0.639066	0.497195
2	0	2. Inner Zone frequenc	0.000622		0.009983	0.009704
3	1	1. Inner Zone frequenc	0.639066	0.009983		0.720296
4	1	2. Inner Zone frequenc	0.497195	0.009704	0.720296	

A5.1.4.4.1.2.26. Open Field P49 Non-MS Only Five Minute Intervals Maximum Velocity Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	942437..	1	942437..	36.8130:	0.00000:
Running	3070.8	1	3070.8	0.1199[	0.73177:
Lesion	38781.:	1	38781.:	1.5148(	0.22901.
Running*Lesion	870.[	1	870.[	0.0340(	0.85508(
Error	691217.[	27	25600.(		
TIME	27576.(	1	27576.(	3.9243]	0.05786.
TIME*Running	39.7	1	39.7	0.0056.	0.94067.
TIME*Lesion	23074.:	1	23074.:	3.2836.	0.08111(
TIME*Running*Lesion	799.[	1	799.[	0.1137[	0.73849.
Error	189729.]	27	7027.(		

A5.1.4.4.1.2.27. Open Field P49 Non-MS only Five Minute Intervals Mean Velocity Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P49 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	9263.55[	1	9263.55[	905.798:	0.00000(
Running	148.16[	1	148.16[	14.487]	0.00073]
Lesion	11.83(	1	11.83(	1.1567	0.29166(
Running*Lesion	0.672	1	0.672	0.0657	0.79967:
Error	276.12[	27	10.227		
TIME	175.10(	1	175.10(	32.541:	0.00000[
TIME*Running	2.48(	1	2.48(	0.460[	0.50296(
TIME*Lesion	1.301	1	1.301	0.241[	0.62689[
TIME*Running*Lesion	0.81:	1	0.81:	0.1511	0.70056]
Error	145.28:	27	5.381		

A5.1.4.4.1.2.28. Open Field P49 Non-MS only Five Minute Intervals Mean Velocity Repeated measures post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 13.859	{2} 10.457
Newman-Keuls test; variable DV_1 (P49 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 5.3808, df = 27.000 Include condition: MS=0			
1	1. Velocity mean (cm/[		0.000146
2	2. Velocity mean (cm/[	0.000146	

A5.1.4.4.2.1.1. Open Field P63 Non-MS only Full Ten Minutes Descriptive Statistics

Effect	Descriptive Statistics (Open Field 10 mins P63) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Distance moved Total (cm) Mean	Distance moved Total (cm) Std.Dev.	Distance moved Total (cm) Std.Err	Distance moved Total (cm) -95.00%	Distance moved Total (cm) +95.00%
Total			32	4639.88	1377.23	243.462	4143.34	5136.43
Running	0		15	4919.92	1702.83	439.669	3976.92	5862.92
Running	1		17	4392.80	999.70	242.463	3878.80	4906.80
Lesion	0		17	4899.72	1461.47	354.460	4148.30	5651.14
Lesion	1		15	4345.40	1258.58	324.965	3648.42	5042.39
Running*Lesion	0	0	8	5313.63	1745.69	617.196	3854.20	6773.07
Running*Lesion	0	1	7	4469.96	1663.60	628.782	2931.38	6008.53
Running*Lesion	1	0	9	4531.80	1132.12	377.374	3661.57	5402.02
Running*Lesion	1	1	8	4236.42	875.65	309.590	3504.35	4968.49

Effect	Descriptive Statistics (Open Field 10 mins P63) Include condition: MS=0							
	Level of Factor	Level of Factor	N	In zone Inner zone duration (s) Mean	In zone Inner zone duration (s) Std.Dev.	In zone Inner zone duration (s) Std.Err	In zone Inner zone duration (s) -95.00%	In zone Inner zone duration (s) +95.00%
Total			32	25.8072	25.6456	4.5335	16.5610	35.0535
Running	0		15	30.0555	25.4084	6.5604	15.9848	44.1262
Running	1		17	22.0588	26.0298	6.3131	8.6754	35.4421
Lesion	0		17	32.1568	29.4058	7.1319	17.0377	47.2759
Lesion	1		15	18.6111	19.0699	4.9238	8.0505	29.1716
Running*Lesion	0	0	8	37.6249	30.1158	10.6475	12.4474	62.8024
Running*Lesion	0	1	7	21.4047	16.8684	6.3756	5.8040	37.0054
Running*Lesion	1	0	9	27.2962	29.6536	9.8845	4.5024	50.0900
Running*Lesion	1	1	8	16.1666	21.6516	7.6550	-1.9345	34.2678

Effect	Descriptive Statistics (Open Field 10 mins P63) Include condition: MS=0							
	Level of Factor	Level of Factor	N	In zone Inner zone frequency Mean	In zone Inner zone frequency Std.Dev.	In zone Inner zone frequency Std.Err	In zone Inner zone frequency -95.00%	In zone Inner zone frequency +95.00%
Total			32	12.1562	10.5680	1.86819	8.34604	15.9664
Running	0		15	14.0000	10.1980	2.63312	8.35251	19.6474
Running	1		17	10.5294	10.9265	2.65008	4.91149	16.1473
Lesion	0		17	13.8235	11.1704	2.70923	8.08020	19.5668
Lesion	1		15	10.2666	9.8739	2.54944	4.79864	15.7346
Running*Lesion	0	0	8	15.5000	10.7038	3.78436	6.55139	24.4486
Running*Lesion	0	1	7	12.2857	10.1277	3.82793	2.91910	21.6523
Running*Lesion	1	0	9	12.3333	12.0000	4.00000	3.10931	21.5573
Running*Lesion	1	1	8	8.5000	9.9713	3.52541	0.16371	16.8362

Effect	Descriptive Statistics (Open Field 10 mins P63) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Velocity Maximum (cm/s) Mean	Velocity Maximum (cm/s) Std.Dev.	Velocity Maximum (cm/s) Std.Err	Velocity Maximum (cm/s) -95.00%	Velocity Maximum (cm/s) +95.00%
Total			32	91.324	33.0433	5.8412	79.4110	103.237
Running	0		15	96.643	43.6389	11.2675	72.4774	120.810
Running	1		17	86.630	19.9808	4.8460	76.3576	96.904
Lesion	0		17	95.122	41.4570	10.0548	73.8070	116.437
Lesion	1		15	87.020	20.3988	5.2669	75.7237	98.316
Running*Lesion	0	0	8	109.242	58.1032	20.5426	60.6672	157.818
Running*Lesion	0	1	7	82.245	7.1638	2.7076	75.6196	88.870
Running*Lesion	1	0	9	82.570	10.3327	3.4442	74.6282	90.513
Running*Lesion	1	1	8	91.198	27.3034	9.6532	68.3721	114.024

Effect	Descriptive Statistics (Open Field 10 mins P63) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Velocity Mean (cm/s) Mean	Velocity Mean (cm/s) Std.Dev.	Velocity Mean (cm/s) Std.Err	Velocity Mean (cm/s) -95.00%	Velocity Mean (cm/s) +95.00%
Total			32	9.3142	2.76443	0.48868	8.31758	10.3109
Running	0		15	9.8760	3.41820	0.88257	7.98312	11.7690
Running	1		17	8.8185	2.00649	0.48664	7.78692	9.8502
Lesion	0		17	9.8361	2.93329	0.71142	8.32798	11.3443
Lesion	1		15	8.7228	2.52643	0.65232	7.32371	10.1219
Running*Lesion	0	0	8	10.6663	3.50424	1.23893	7.73677	13.5960
Running*Lesion	0	1	7	8.9728	3.33945	1.26219	5.88435	12.0613
Running*Lesion	1	0	9	9.0981	2.27192	0.75730	7.35179	10.8445
Running*Lesion	1	1	8	8.5040	1.75775	0.62146	7.03451	9.9735

A5.1.4.4.2.1.2. Open Field P63 Non-MS only Full Ten Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for Distance moved Total (cm) (Open Field 10 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	68292062	1	68292062	357.025	0.00000
Running	204573	1	204573	1.069	0.30991
Lesion	257445	1	257445	1.345	0.25579
Running*Lesion	59653	1	59653	0.311	0.58097
Error	5355863	28	191280		

A5.1.4.4.2.1.3. Open Field P63 Non-MS only Full Ten Minutes Inner zone duration ANOVA

	Univariate Tests of Significance for In zone Inner zone duration (s) (Open Field Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	20844.0	1	20844.0	31.7670	0.00000
Running	480.83	1	480.83	0.7328	0.39924
Lesion	1484.25	1	1484.25	2.2620	0.14377
Running*Lesion	51.42	1	51.42	0.0783	0.78158
Error	18372.2	28	656.15		

A5.1.4.4.2.1.4. Open Field P63 Non-MS only Full Ten Minutes Inner zone Frequency ANOVA

	Univariate Tests of Significance for In zone Inner zone frequency (Open Field Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4690.39	1	4690.39	40.2186	0.00000
Running	95.910	1	95.910	0.8224	0.37221
Lesion	98.556	1	98.556	0.8450	0.36579
Running*Lesion	0.760	1	0.760	0.0065	0.93621
Error	3265.42	28	116.62		

A5.1.4.4.2.1.5. Open Field P63 Non-MS only Full Ten Minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for Velocity Maximum (cm/s) (Open Field 10 r Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	264724.	1	264724.	246.974	0.00000
Running	623.0	1	623.0	0.581	0.45221
Lesion	669.6	1	669.6	0.624	0.43594
Running*Lesion	2518.4	1	2518.4	2.349	0.13654
Error	30012.	28	1071.9		

A5.1.4.4.2.1.6. Open Field P63 Non-MS only Full Ten Minutes Mean Velocity ANOVA

	Univariate Tests of Significance for Velocity Mean (cm/s) (Open Field 10 min Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2752.003	1	2752.003	357.0873	0.00000(
Running	8.234	1	8.234	1.0684	0.31016(
Lesion	10.385	1	10.385	1.3475	0.25552(
Running*Lesion	2.399	1	2.399	0.3112	0.58136
Error	215.791	28	7.707		

A5.1.4.4.2.2.1. Open Field P63 Non-MS only Five Minute Intervals 1st Five minutes Descriptive Stats

	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
Effect	Level of Factor	Level of Factor	N	1. Distance moved (cm) Mean	1. Distance moved (cm) Std.Dev.	1. Distance moved (cm) Std.Err	1. Distance moved (cm) -95.00%	1. Distance moved (cm) +95.00%
Total			32	2964.40	948.88	167.740(	2622.29	3306.51(
Running	0		15	3082.59	1215.18	313.760	2409.64	3755.54
Running	1		17	2860.12	654.01	158.622	2523.86(	3196.39
Lesion	0		17	3070.33	1009.15	244.755	2551.47	3589.19(
Lesion	1		15	2844.35	894.85	231.050	2348.80	3339.91
Running*Lesion	0	0	8	3237.76	1237.58	437.551	2203.12	4272.41
Running*Lesion	0	1	7	2905.25(	1260.92	476.583	1739.09	4071.40
Running*Lesion	1	0	9	2921.50	802.28	267.428(	2304.81	3538.19
Running*Lesion	1	1	8	2791.07	481.44(	170.217(	2388.57	3193.57

	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
Effect	Level of Factor	Level of Factor	N	1. Inner zone duration (s) Mean	1. Inner zone duration (s) Std.Dev.	1. Inner zone duration (s) Std.Err	1. Inner zone duration (s) -95.00%	1. Inner zone duration (s) +95.00%
Total			32	12.2447	14.5703(	2.57569(	6.9916	17.4979
Running	0		15	12.1000(	12.5399(	3.23778	5.1556	19.0443
Running	1		17	12.3725	16.5435(	4.01240	3.8666	20.8784(
Lesion	0		17	14.8235	17.1385	4.15671	6.0116	23.6353
Lesion	1		15	9.3222	10.8240	2.79476	3.3280	15.3163
Running*Lesion	0	0	8	14.2500	13.4119(	4.74184	3.0373	25.4626
Running*Lesion	0	1	7	9.6428	11.9936(	4.53315	-1.4493	20.7350
Running*Lesion	1	0	9	15.3333	20.7230	6.90767	-0.5958(	31.2624
Running*Lesion	1	1	8	9.0416(	10.5276	3.72208	0.2403	17.8429

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Inner Zone frequency Mean	1. Inner Zone frequency Std.Dev.	1. Inner Zone frequency Std.Err	1. Inner Zone frequency -95.00%	1. Inner Zone frequency +95.00%
Total			32	6.59375	6.77690	1.19799	4.15041	9.03708
Running	0		15	7.00000	6.82432	1.76203	3.22081	10.7791
Running	1		17	6.23529	6.92395	1.67930	2.67532	9.7952
Lesion	0		17	7.23529	6.47620	1.57070	3.90553	10.5650
Lesion	1		15	5.86666	7.25914	1.87430	1.84668	9.8866
Running*Lesion	0	0	8	7.25000	5.84929	2.06803	2.35986	12.1401
Running*Lesion	0	1	7	6.71428	8.28078	3.12984	-0.94416	14.3727
Running*Lesion	1	0	9	7.22222	7.34468	2.44822	1.57659	12.8678
Running*Lesion	1	1	8	5.12500	6.72813	2.37875	-0.49986	10.7498

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Velocity max (cm/s) Mean	1. Velocity max (cm/s) Std.Dev.	1. Velocity max (cm/s) Std.Err	1. Velocity max (cm/s) -95.00%	1. Velocity max (cm/s) +95.00%
Total			32	80.7446	10.1651	1.79695	77.0797	84.4095
Running	0		15	81.3979	9.7863	2.52683	75.9784	86.8174
Running	1		17	80.1681	10.7538	2.60820	74.6390	85.6973
Lesion	0		17	79.5525	10.7840	2.61550	74.0079	85.0972
Lesion	1		15	82.0956	9.6026	2.47940	76.7778	87.4134
Running*Lesion	0	0	8	80.8372	12.0959	4.27656	70.7247	90.9497
Running*Lesion	0	1	7	82.0387	7.2024	2.72226	75.3775	88.6998
Running*Lesion	1	0	9	78.4106	10.0721	3.35739	70.6684	86.1528
Running*Lesion	1	1	8	82.1453	11.8301	4.18259	72.2551	92.0356

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	1. Velocity mean (cm/s) Mean	1. Velocity mean (cm/s) Std.Dev.	1. Velocity mean (cm/s) Std.Err	1. Velocity mean (cm/s) -95.00%	1. Velocity mean (cm/s) +95.00%
Total			32	11.9730	3.83702	0.67829	10.5897	13.3564
Running	0		15	12.4428	4.90884	1.26745	9.7244	15.1613
Running	1		17	11.5585	2.65539	0.64402	10.1932	12.9238
Lesion	0		17	12.4102	4.08417	0.99055	10.3103	14.5101
Lesion	1		15	11.4776	3.61136	0.93245	9.4777	13.4776
Running*Lesion	0	0	8	13.1212	5.00865	1.77082	8.9338	17.3085
Running*Lesion	0	1	7	11.6676	5.06394	1.91399	6.9843	16.3510
Running*Lesion	1	0	9	11.7782	3.23347	1.07782	9.2927	14.2636
Running*Lesion	1	1	8	11.3114	2.00899	0.71028	9.6318	12.9910

A5.1.4.4.2.2.2. Open Field P63 Non-MS only Five Minute Intervals 2nd Five minutes Descriptive Stats

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Distance moved (cm) Mean	2. Distance moved (cm) Std.Dev.	2. Distance moved (cm) Std.Err	2. Distance moved (cm) -95.00%	2. Distance moved (cm) +95.00%
Total			32	1661.89	533.359	94.285	1469.59	1854.19
Running	0		15	1817.96	578.847	149.457	1497.41	2138.52
Running	1		17	1524.18	463.677	112.458	1285.78	1762.58
Lesion	0		17	1810.30	523.879	127.059	1540.94	2079.65
Lesion	1		15	1493.69	509.107	131.450	1211.76	1775.63
Running*Lesion	0	0	8	2040.61	507.297	179.356	1616.50	2464.72
Running*Lesion	0	1	7	1563.51	583.043	220.369	1024.28	2102.73
Running*Lesion	1	0	9	1605.57	472.782	157.594	1242.16	1968.99
Running*Lesion	1	1	8	1432.61	466.761	165.025	1042.39	1822.83

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Inner zone duration (s) Mean	2. Inner zone duration (s) Std.Dev.	2. Inner zone duration (s) Std.Err	2. Inner zone duration (s) -95.00%	2. Inner zone duration (s) +95.00%
Total			32	13.5260	14.3507	2.53686	8.3520	18.7000
Running	0		15	17.8777	16.1350	4.16604	8.9424	26.8130
Running	1		17	9.6862	11.7387	2.84706	3.6507	15.7217
Lesion	0		17	17.2941	16.5544	4.01504	8.7825	25.8056
Lesion	1		15	9.2555	10.2973	2.65876	3.5530	14.9580
Running*Lesion	0	0	8	23.2916	19.7905	6.99700	6.7463	39.8369
Running*Lesion	0	1	7	11.6904	8.1714	3.08851	4.1331	19.2477
Running*Lesion	1	0	9	11.9629	11.7238	3.90796	2.9511	20.9747
Running*Lesion	1	1	8	7.1250	11.9883	4.23851	-2.8975	17.1474

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	2. Inner Zone frequency Mean	2. Inner Zone frequency Std.Dev.	2. Inner Zone frequency Std.Err	2. Inner Zone frequency -95.00%	2. Inner Zone frequency +95.00%
Total			32	5.56250	4.59970	0.81312	3.90413	7.2208
Running	0		15	6.93333	4.28396	1.10611	4.56095	9.3057
Running	1		17	4.35294	4.64947	1.12766	1.96240	6.7434
Lesion	0		17	6.58823	5.25664	1.27492	3.88551	9.2909
Lesion	1		15	4.40000	3.54159	0.91443	2.43873	6.3612
Running*Lesion	0	0	8	8.12500	4.99821	1.76713	3.94638	12.3036
Running*Lesion	0	1	7	5.57142	3.10145	1.17224	2.70305	8.4398
Running*Lesion	1	0	9	5.22222	5.38000	1.79333	1.08678	9.3576
Running*Lesion	1	1	8	3.37500	3.77728	1.33547	0.21711	6.5328

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0 Level of Factor	Level of Factor	N	2. Velocity max (cm/s) Mean	2. Velocity max (cm/s) Std.Dev.	2. Velocity max (cm/s) Std.Err	2. Velocity max (cm/s) -95.00%	2. Velocity max (cm/s) +95.00%
Total			32	76.0668	13.8289	2.44462	71.0809	81.052
Running	0		15	78.3783	17.2143	4.44473	68.8453	87.911
Running	1		17	74.0272	10.0897	2.44711	68.8396	79.215
Lesion	0		17	80.3558	16.6001	4.02611	71.8208	88.890
Lesion	1		15	71.2059	7.8021	2.01450	66.8852	75.526
Running*Lesion	0	0	8	85.0415	20.0204	7.07830	68.3040	101.779
Running*Lesion	0	1	7	70.7632	9.8475	3.72201	61.6558	79.870
Running*Lesion	1	0	9	76.1907	12.6070	4.20236	66.5001	85.881
Running*Lesion	1	1	8	71.5933	6.1854	2.18687	66.4222	76.764

Effect	Descriptive Statistics (P63 Open field 5 min timebins spreadsheet) Include condition: MS=0 Level of Factor	Level of Factor	N	2. Velocity mean (cm/s) Mean	2. Velocity mean (cm/s) Std.Dev.	2. Velocity mean (cm/s) Std.Err	2. Velocity mean (cm/s) -95.00%	2. Velocity mean (cm/s) +95.00%
Total			32	6.71388	2.16651	0.38298	5.93277	7.49499
Running	0		15	7.34000	2.35512	0.60808	6.03578	8.64422
Running	1		17	6.16142	1.88390	0.45691	5.19280	7.13003
Lesion	0		17	7.32202	2.14448	0.52011	6.21943	8.42461
Lesion	1		15	6.02464	2.04438	0.52785	4.89250	7.15679
Running*Lesion	0	0	8	8.26823	2.06966	0.73173	6.53795	9.99852
Running*Lesion	0	1	7	6.27915	2.34154	0.88501	4.11359	8.44472
Running*Lesion	1	0	9	6.48094	1.93865	0.64621	4.99076	7.97112
Running*Lesion	1	1	8	5.80195	1.88096	0.66502	4.22942	7.37447

A5.1.4.4.2.2.3. Open Field P63 Non-MS only Five Minute Time-bins First Five Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for 1. Distance moved (cm) (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	27889686	1	27889686	288.877	0.00000
Running	36763	1	36763	0.380	0.54216
Lesion	42525	1	42525	0.440	0.51232
Running*Lesion	8104	1	8104	0.083	0.77416
Error	2703260	28	96545		

A5.1.4.4.2.2.4. Open Field P63 Non-MS only Five Minute Time-bins First Five Minutes Inner Zone duration ANOVA

	Univariate Tests of Significance for 1. Inner zone duration (s) (P63 Open field Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4622.88	1	4622.88	20.4370	0.00010
Running	0.461	1	0.461	0.0020	0.96430
Lesion	235.69	1	235.69	1.0419	0.31609
Running*Lesion	5.631	1	5.631	0.0248	0.87576
Error	6333.61	28	226.20		

A5.1.4.4.2.2.5. Open Field P63 Non-MS only Five Minute Time-bins First Five Minutes Inner zone frequency ANOVA

	Univariate Tests of Significance for 1. Inner Zone frequency (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1373.68	1	1373.68	27.4863	0.00001
Running	5.189	1	5.189	0.1038	0.74968
Lesion	13.756	1	13.756	0.2752	0.60397
Running*Lesion	4.838	1	4.838	0.0968	0.75799
Error	1399.35	28	49.977		

A5.1.4.4.2.2.6. Open Field P63 Non-MS only Five Minute Time-bins First Five Minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for 1. Velocity max (cm/s) (P63 Open field 5 n Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	207569.	1	207569.	1858.81	0.00000
Running	10.7	1	10.7	0.096	0.75942
Lesion	48.3	1	48.3	0.433	0.51590
Running*Lesion	12.7	1	12.7	0.114	0.73812
Error	3126.7	28	111.7		

A5.1.4.4.2.2.7. Open Field P63 Non-MS only Five Minute Time-bins First Five Minutes Mean Velocity ANOVA

	Univariate Tests of Significance for 1. Velocity mean (cm/s) (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4548.61	1	4548.61	288.563	0.00000
Running	5.729	1	5.729	0.3635	0.55144
Lesion	7.317	1	7.317	0.4642	0.50126
Running*Lesion	1.932	1	1.932	0.1226	0.72888
Error	441.36	28	15.763		

A5.1.4.4.2.2.8. Open Field P63 Non-MS only Five Minute Time-bins Second Five Minutes Distance travelled ANOVA

	Univariate Tests of Significance for 2. Distance moved (cm) (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	8754601	1	8754601	342.629	0.00000
Running	63551	1	63551	2.4872	0.12600
Lesion	83852	1	83852	3.2817	0.08079
Running*Lesion	18354	1	18354	0.7184	0.40387
Error	715433	28	25551		

A5.1.4.4.2.2.9. Open Field P63 Non-MS only Five Minute Time-bins Second five minutes Inner zone duration ANOVA

	Univariate Tests of Significance for 2. Inner zone duration (s) (P63 Open field Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	5801.10	1	5801.10	30.9514	0.00000
Running	501.27	1	501.27	2.6745	0.11316
Lesion	536.23	1	536.23	2.8610	0.10185
Running*Lesion	90.762	1	90.762	0.4842	0.49223
Error	5247.92	28	187.42		

A5.1.4.4.2.2.10. Open Field P63 Non-MS only Five Minute Time-bins Second Five minutes Frequency of entry into inner zone ANOVA

	Univariate Tests of Significance for 2. Inner Zone frequency (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	986.186	1	986.186	48.9579	0.00000
Running	51.594	1	51.594	2.5613	0.12073
Lesion	38.429	1	38.429	1.9077	0.17813
Running*Lesion	0.990	1	0.990	0.0491	0.82616
Error	564.019	28	20.143		

A5.1.4.4.2.2.11. Open Field P63 Non-MS only Five Minute Time-bins Second Five minutes Maximum Velocity ANOVA

	Univariate Tests of Significance for 2. Velocity max (cm/s) (P63 Open field 5 n Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	182881.	1	182881.	1039.32	0.00000
Running	127.6	1	127.6	0.725	0.40159
Lesion	707.0	1	707.0	4.018	0.05478
Running*Lesion	186.0	1	186.0	1.057	0.31273
Error	4926.9	28	176.0		

A5.1.4.4.2.2.12. Open Field P63 Non-MS only Five Minutes Time-bins Second Five Minutes Mean Velocity ANOVA

	Univariate Tests of Significance for 2. Velocity mean (cm/s) (P63 Open field 5 Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1428.39	1	1428.39	339.762	0.00000
Running	10.175	1	10.175	2.420	0.13100
Lesion	14.125	1	14.125	3.359	0.07745
Running*Lesion	3.406	1	3.406	0.810	0.37577
Error	117.715	28	4.204		

A5.1.4.4.2.2.13. Open Field P63 Non-MS Only Five Minute Intervals Distance Travelled Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P63 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	33947863	1	33947863	358.384	0.00000
Running	98493	1	98493	1.039	0.31660
Lesion	122903	1	122903	1.297	0.26432
Running*Lesion	25425	1	25425	0.268	0.60846
Error	2652289	28	94724		
TIME	2696425	1	2696425	98.511	0.00000
TIME*Running	1821	1	1821	0.066	0.79832
TIME*Lesion	3474	1	3474	0.126	0.72431
TIME*Running*Lesion	1033	1	1033	0.037	0.84735
Error	766405	28	27371		

A5.1.4.4.2.2.14. Open Field P63 Non-MS Only Five Minute Intervals Distance Travelled Repeated Measures post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 2964.4	{2} 1661.9
Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread Approximate Probabilities for Post Hoc Tests Error: Within MS = 2737E2, df = 28.000 Include condition: MS=0			
1	1. Distance moved (cm		0.000141
2	2. Distance moved (cm	0.000141	

A5.1.4.4.2.2.15. Open Field P63 Non-MS only Five Minute Intervals Inner Zone duration Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P63 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	10390.5	1	10390.5	31.6648	0.00000
Running	235.66	1	235.66	0.7181	0.40393
Lesion	741.48	1	741.48	2.2596	0.14398
Running*Lesion	25.59	1	25.59	0.0779	0.78210
Error	9188.0	28	328.14		
TIME	33.40	1	33.40	0.3907	0.53698
TIME*Running	266.07	1	266.07	3.1125	0.08860
TIME*Lesion	30.45	1	30.45	0.3562	0.55539
TIME*Running*Lesion	70.80	1	70.80	0.8282	0.37054
Error	2393.5	28	85.48		

A5.1.4.4.2.2.16. Open Field P63 Non-MS only Five Minute Intervals Frequency of Entry into Inner zone repeated measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P63 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	2343.85	1	2343.85	40.1453	0.00000
Running	44.753	1	44.753	0.7665	0.38874
Lesion	49.084	1	49.084	0.8407	0.36702
Running*Lesion	0.726	1	0.726	0.0124	0.91203
Error	1634.76	28	58.384		
TIME	16.016	1	16.016	1.3646	0.25258
TIME*Running	12.030	1	12.030	1.0250	0.32000
TIME*Lesion	3.101	1	3.101	0.2642	0.61128
TIME*Running*Lesion	5.103	1	5.103	0.4347	0.51504
Error	328.61	28	11.736		

A5.1.4.4.2.2.17. Open Field P63 Non-MS Only Five Minute Intervals Maximum Velocity Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (P63 Open field 5 min timebins Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	390059.	1	390059.	2184.10	0.00000
Running	106.1	1	106.1	0.594	0.44732
Lesion	192.8	1	192.8	1.079	0.30770
Running*Lesion	148.0	1	148.0	0.829	0.37040
Error	5000.5	28	178.6		
TIME	390.6	1	390.6	3.583	0.06876
TIME*Running	32.2	1	32.2	0.296	0.59089
TIME*Lesion	562.5	1	562.5	5.159	0.03100
TIME*Running*Lesion	50.7	1	50.7	0.465	0.50096
Error	3053.1	28	109.0		

A5.1.4.4.2.2.18. Open Field P63 Non-MS only Five Minute Intervals Maximum Velocity Repeated Measures post hoc Newman Keuls test (Time*Lesion)

Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 143.81, df = 52.906
Include condition: MS=0

Cell No.	Lesion	TIME	{1} 79.553	{2} 80.356	{3} 82.096	{4} 71.206
1	0	1. Velocity max (cm/s		0.82978(	0.82153⁴	0.05482(
2	0	2. Velocity max (cm/s	0.82978(		0.68394²	0.08891ᵢ
3	1	1. Velocity max (cm/s	0.82153⁴	0.68394²		0.03099³
4	1	2. Velocity max (cm/s	0.05482(	0.08891ᵢ	0.03099³	

A5.1.4.4.2.2.19. Open Field P63 Non-MS only Five Minute Intervals Mean Velocity Repeated measures ANOVA

Repeated Measures Analysis of Variance (P63 Open field 5 min timebins
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	5537.46⁵	1	5537.46⁵	356.569⁵	0.00000(
Running	15.58⁷	1	15.58⁷	1.003⁷	0.32499(
Lesion	20.88⁷	1	20.88⁷	1.345(	0.25595(
Running*Lesion	5.23⁴	1	5.23⁴	0.337(	0.56619⁵
Error	434.83⁵	28	15.53(		
TIME	439.54⁵	1	439.54⁵	99.057⁴	0.00000(
TIME*Running	0.31⁷	1	0.31⁷	0.071⁴	0.79120⁵
TIME*Lesion	0.55⁵	1	0.55⁵	0.125(	0.72629⁸
TIME*Running*Lesion	0.10⁴	1	0.10⁴	0.023⁴	0.87958(
Error	124.24⁵	28	4.43⁷		

A5.1.4.4.2.2.20. Open Field P63 Non-MS only Five Minute Intervals Mean Velocity Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (P63 Open field 5 min timebins spread
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 4.4372, df = 28.000
Include condition: MS=0

Cell No.	TIME	{1} 11.973	{2} 6.7139
1	1. Velocity mean (cm/s		0.000141
2	2. Velocity mean (cm/s	0.000141	

A5.1.4.4.3.1. Open Field P49 and P63 Non-MS only Full Ten Minutes Distance travelled Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (Repeated measures spreadsh Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	1.761132E+0	1	1.761132E+0	794.0878	0.00000(
Running	1.578508E+0	1	1.578508E+0	7.1174	0.01274
Lesion	3.775468E+0	1	3.775468E+0	1.7023	0.20299
Running*Lesion	7.198630E+0	1	7.198630E+0	0.0325	0.85837
Error	5.988074E+0	27	2.217805E+0		
TIME	3.214473E+0	1	3.214473E+0	32.1169	0.00000
TIME*Running	4.033841E+0	1	4.033841E+0	4.0304	0.05479
TIME*Lesion	6.952490E+0	1	6.952490E+0	0.0695	0.79411
TIME*Running*Lesion	6.113612E+0	1	6.113612E+0	0.6108	0.44127
Error	2.702336E+0	27	1.000865E+0		

A5.1.4.4.3.2. Open Field P49 and P63 Non-MS only Full Ten Minutes Distance travelled Repeated Measures post hoc Newman Keuls test (Time effect)

Cell No.	TIME	{1} 6018.1	{2} 4615.5
Newman-Keuls test; variable DV_1 (Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 1001E3, df = 27.000 Include condition: MS=0			
1	P49 Distance moved Total (cm)		0.00014
2	P63 Distance moved Total (cm	0.00014	

A5.1.4.4.3.3. Open Field P49 and P63 Non-MS only Full Ten Minutes Inner zone duration Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (Repeated measures spreadsh Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0					
Intercept	59950.11	1	59950.11	76.8540	0.00000(
Running	1879.11	1	1879.11	2.4089	0.13228
Lesion	699.20	1	699.20	0.8963	0.35216(
Running*Lesion	43.17	1	43.17	0.0553	0.81579
Error	21061.39	27	780.05		
TIME	2991.41	1	2991.41	8.6971	0.00650
TIME*Running	546.28	1	546.28	1.5882	0.21836(
TIME*Lesion	275.62	1	275.62	0.8013	0.37860
TIME*Running*Lesion	36.44	1	36.44	0.1059	0.74730
Error	9286.69	27	343.95		

A5.1.4.4.3.4. Open Field P49 and P63 Non-MS only Full Ten Minutes Inner zone duration Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 343.95, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 37.519	{2} 24.215
1	P49In zone Inner zone duration (		0.008943
2	P63 In zone Inner zone duration (	0.008943	

A5.1.4.4.3.5. Open Field P49 and P63 Non-MS only Full Ten Minutes Inner zone Frequency Repeated Measures ANOVA

Repeated Measures Analysis of Variance (Repeated measures spreadsh
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	14582.88	1	14582.88	98.81023	0.000000
Running	385.63	1	385.63	2.61295	0.117621
Lesion	156.01	1	156.01	1.05706	0.313010
Running*Lesion	8.89	1	8.89	0.06022	0.808000
Error	3984.79	27	147.58		
TIME	829.04	1	829.04	15.39297	0.000542
TIME*Running	85.43	1	85.43	1.58622	0.218646
TIME*Lesion	3.64	1	3.64	0.06768	0.796723
TIME*Running*Lesion	2.09	1	2.09	0.03887	0.845178
Error	1454.17	27	53.86		

A5.1.4.4.3.6. Open Field P49 and P63 Non-MS only Full Ten Minutes Inner zone Frequency Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 53.858, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 18.806	{2} 11.677
1	P49 In zone Inner zone frequency		0.000834
2	P63 In zone Inner zone frequen	0.000834	

A5.1.4.4.3.7. Open Field P49 and P63 Non-MS only Full Ten Minutes Maximum Velocity Repeated Measures ANOVA

Repeated Measures Analysis of Variance (Repeated measures spreadsh
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	953500.5	1	953500.5	69.22696	0.000000
Running	443.6	1	443.6	0.03221	0.858918
Lesion	29866.6	1	29866.6	2.16840	0.152435
Running*Lesion	7388.0	1	7388.0	0.53639	0.470243
Error	371885.7	27	13773.5		
TIME	61807.5	1	61807.5	4.37581	0.045990
TIME*Running	697.8	1	697.8	0.04940	0.825782
TIME*Lesion	15392.8	1	15392.8	1.08977	0.305779
TIME*Running*Lesion	11.7	1	11.7	0.00083	0.977253
Error	381370.3	27	14124.8		

A5.1.4.4.3.8. Open Field P49 and P63 Non-MS only Full Ten Minutes Maximum Velocity Repeated Measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 14125., df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 157.36	{2} 92.221
1	P49 Velocity Maximum (cm/		0.040111
2	P63 Velocity Maximum (cm/	0.040111	

A5.1.4.4.3.9. Open Field P49 and P63 Non-MS only Full Ten Minutes Mean Velocity Repeated Measures ANOVA

Repeated Measures Analysis of Variance (Repeated measures spreadsh
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	7152.955	1	7152.955	784.8541	0.000000
Running	64.508	1	64.508	7.0782	0.012971
Lesion	15.404	1	15.404	1.6902	0.204562
Running*Lesion	0.422	1	0.422	0.0463	0.831205
Error	246.071	27	9.114		
TIME	137.199	1	137.199	34.2785	0.000003
TIME*Running	16.731	1	16.731	4.1802	0.050762
TIME*Lesion	0.257	1	0.257	0.0643	0.801778
TIME*Running*Lesion	2.120	1	2.120	0.5297	0.473003
Error	108.067	27	4.002		

A5.1.4.4.3.10. Open Field P49 and P63 Non-MS only Full Ten Minutes Mean Velocity Repeated measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 4.0025, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 12.164	{2} 9.2653
1	P49 Velocity Mean (cm/		0.000147
2	P63 Velocity Mean (cm/	0.000147	

APPENDIX A5.1.5 ELEVATED PLUS MAZE

A5.1.5.1.1.1. EPM P49 Full Five Minutes Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 Total distance (cm)	5 Arena Duration (s)	6 Duration in open arms (s)	7 Frequency of entry into open arms
164	1	1	0	1301.06	247.33	56.33	6
129	1	1	1	1454.24	247.33	25.33	5
148	1	0	0	1794.00	247.33	24.50	7
141	1	0	1	774.91	247.33	16.67	2
207	0	1	1	703.11	247.33	0.00	0
176	0	0	0	1025.47	247.33	24.17	5
174	0	1	0	1004.51	247.33	3.50	5
227	0	0	1	884.78	247.33	10.50	1
122	1	1	0	1061.73	247.33	9.33	2
135	1	0	1	1644.06	247.33	21.17	10
197	1	0	0	2035.38	247.33	51.83	10
195	1	1	1	957.17	247.33	18.17	6
154	1	0	1	1654.46	247.33	22.83	3
167	0	0	0	1582.40	247.33	52.67	7
222	0	1	0	1187.85	247.33	31.17	5
203	0	1	1	1094.59	247.33	54.33	6
193	0	0	1	1669.43	247.33	38.67	6
182	1	1	1	1329.20	247.33	26.67	5
209	1	0	1	1569.90	247.33	53.83	8
144	1	0	0	1447.44	247.33	34.17	7
216	1	1	0	1411.74	247.33	17.67	5
117	0	0	1	1440.42	247.33	50.50	12
188	0	1	1	1305.66	247.33	48.33	9
169	0	0	0	1646.21	247.33	69.83	11
234	0	0	1	1756.31	247.33	61.67	10
126	0	0	1	1984.32	247.33	78.17	10
138	1	1	0	1265.13	247.33	28.83	4
157	1	0	1	1521.54	247.33	39.83	7
131	0	1	0	1252.96	247.33	31.17	5
191	0	1	1	1269.55	247.33	24.50	4
160	0	0	0	1348.44	247.33	33.00	10
186	1	0	0	1288.22	247.33	42.67	6
220	1	1	1	927.87	247.33	10.00	3
190	1	0	0	1734.32	247.33	19.26	7
143	1	0	1	1415.45	247.33	30.18	7
196	1	1	0	1422.62	247.33	53.82	17
145	1	1	1	1728.96	247.33	16.38	5
198	1	1	1	2340.56	247.33	85.09	10
139	1	0	0	1781.44	247.33	35.08	8
210	0	1	1	1522.64	247.33	31.71	10
232	0	1	0	1441.10	247.33	7.29	6
171	0	0	0	1778.65	247.33	13.36	2

	1 MS	2 Running	3 Lesion	4 Duration in closed arms (s)	5 Duration in central square (s)	6 Maximum velocity (cm/s)	7 Mean velocity (cm/s)
164	1	1	0	143.33	47.67	37.34	5.26
129	1	1	1	198.50	23.50	48.53	5.88
148	1	0	0	196.67	26.17	54.39	7.26
141	1	0	1	220.83	9.83	44.98	3.14
207	0	1	1	240.00	7.33	34.76	2.84
176	0	0	0	208.00	15.17	48.22	4.15
174	0	1	0	224.83	19.00	39.42	4.06
227	0	0	1	230.33	6.50	48.78	3.58
122	1	1	0	210.17	27.83	47.39	4.30
135	1	0	1	196.00	30.17	52.07	6.65
197	1	0	0	175.00	20.50	51.90	8.23
195	1	1	1	204.83	24.33	44.40	3.87
154	1	0	1	207.83	16.67	53.90	6.69
167	0	0	0	151.67	43.00	48.24	6.40
222	0	1	0	202.17	14.00	53.66	4.81
203	0	1	1	165.67	27.33	37.74	4.43
193	0	0	1	169.00	39.67	50.42	6.75
182	1	1	1	190.17	30.50	42.25	5.38
209	1	0	1	176.17	17.33	48.42	6.35
144	1	0	0	167.67	45.50	52.34	5.86
216	1	1	0	199.50	30.17	56.47	5.71
117	0	0	1	155.83	41.00	53.70	5.83
188	0	1	1	157.67	41.33	58.51	5.28
169	0	0	0	130.50	47.00	42.10	6.66
234	0	0	1	142.67	43.00	51.33	7.11
126	0	0	1	127.67	41.50	55.48	8.03
138	1	1	0	175.83	42.67	40.64	5.12
157	1	0	1	177.00	30.50	49.57	6.16
131	0	1	0	190.33	25.83	59.94	5.07
191	0	1	1	199.67	23.17	49.21	5.14
160	0	0	0	186.17	28.17	48.14	5.46
186	1	0	0	185.17	19.50	53.88	5.21
220	1	1	1	218.00	19.33	40.34	3.75
190	1	0	0	190.70	37.37	202.47	7.20
143	1	0	1	188.12	29.03	62.73	5.87
196	1	1	0	153.27	40.25	642.17	5.90
145	1	1	1	186.90	44.05	654.17	7.17
198	1	1	1	119.22	43.03	1816.20	9.71
139	1	0	0	179.72	32.53	467.53	7.39
210	0	1	1	171.51	44.12	817.90	6.32
232	0	1	0	191.10	48.94	428.42	5.98
171	0	0	0	205.92	28.05	58.25	7.39

	1 MS	2 Running	3 Lesion	4 Total distance (cm)	5 Arena Duration (s)	6 Duration in open arms (s)	7 Frequency of entry into open arms
219	0	0	0	1572.94	247.33	5.99	4
205	0	0	1	1383.13	247.33	11.45	6
137	0	1	1	1393.96	247.33	7.56	4
250	1	0	0	1553.91	247.33	34.00	12
271	1	1	0	1419.38	247.33	30.00	9
301	0	1	1	863.57	247.33	28.50	3
305	0	1	0	959.48	247.33	12.00	3
309	1	0	1	1787.83	247.33	40.33	8
306	1	1	1	1372.81	247.33	51.17	9
312	0	1	1	1322.38	247.33	71.50	15
313	0	1	0	1459.12	247.33	42.17	10
315	0	0	0	1455.88	247.33	31.50	4
314	0	1	0	1314.89	247.33	53.83	10
317	1	1	1	1205.19	247.33	21.67	3
319	1	1	0	1240.41	247.33	3.67	4
318	1	1	0	1391.26	247.33	27.00	10
320	1	1	1	1204.38	247.33	26.50	10
322	0	0	1	1514.50	247.33	27.67	6
323	0	1	0	1323.08	247.33	37.50	9
324	0	1	0	1288.17	247.33	33.67	7

	1 MS	2 Running	3 Lesion	4 Duration in closed arms (s)	5 Duration in central square (s)	6 Maximum velocity (cm/s)	7 Mean velocity (cm/s)
219	0	0	0	207.05	34.29	836.74	6.5
205	0	0	1	205.00	30.88	435.70	5.7
137	0	1	1	216.31	23.46	512.56	5.7
250	1	0	0	165.17	48.17	62.89	6.2
271	1	1	0	190.17	27.17	58.26	5.7
301	0	1	1	184.33	34.50	56.09	3.4
305	0	1	0	206.33	29.00	39.22	3.8
309	1	0	1	170.67	36.33	51.38	7.2
306	1	1	1	162.67	33.50	50.98	5.5
312	0	1	1	62.33	113.50	49.33	5.3
313	0	1	0	151.00	54.17	41.17	5.9
315	0	0	0	174.67	41.17	54.29	5.8
314	0	1	0	143.50	50.00	45.14	5.3
317	1	1	1	184.33	41.33	44.95	4.8
319	1	1	0	223.00	20.67	58.86	5.0
318	1	1	0	194.50	25.83	73.37	5.6
320	1	1	1	185.33	35.50	54.82	4.8
322	0	0	1	192.67	27.00	52.83	6.1
323	0	1	0	169.00	40.83	50.14	5.3
324	0	1	0	172.83	40.83	57.01	5.2

A5.1.5.1.1.2. EPM P49 Full Five Minutes Descriptive Statistics

	Descriptive Statistics (P49 Full five minutes spreadsheet)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	Total distance (cm) Mean	Total distance (cm) Std.Dev.	Total distance (cm) Std.Err	Total distance (cm) -95.00%	Total distance (cm) +95.00%
Total				62	1399.77	309.045	39.248	1321.29	1478.25
MS	0			31	1346.75	289.162	51.935	1240.69	1452.82
MS	1			31	1452.79	323.694	58.137	1334.06	1571.52
Running	0			28	1537.34	289.984	54.801	1424.90	1649.79
Running	1			34	1286.48	280.111	48.038	1188.74	1384.21
Lesion	0			31	1412.55	250.326	44.959	1320.73	1504.37
Lesion	1			31	1386.99	362.216	65.056	1254.13	1519.85
MS*Running	0	0		14	1503.06	289.026	77.245	1336.18	1669.94
MS*Running	0	1		17	1218.03	223.434	54.190	1103.15	1332.91
MS*Running	1	0		14	1571.63	297.627	79.544	1399.78	1743.47
MS*Running	1	1		17	1354.92	319.297	77.440	1190.75	1519.09
MS*Lesion	0	0		16	1352.57	234.546	58.636	1227.59	1477.55
MS*Lesion	0	1		15	1340.55	346.632	89.500	1148.59	1532.51
MS*Lesion	1	0		15	1476.53	258.532	66.752	1333.36	1619.70
MS*Lesion	1	1		16	1430.53	382.204	95.551	1226.87	1634.19
Running*Lesion	0	0		14	1574.62	254.342	67.975	1427.76	1721.47
Running*Lesion	0	1		14	1500.07	327.059	87.410	1311.23	1688.91
Running*Lesion	1	0		17	1279.08	151.736	36.801	1201.07	1357.10
Running*Lesion	1	1		17	1293.87	372.408	90.322	1102.39	1485.34
MS*Running*Les	0	0	0	7	1487.14	244.973	92.591	1260.57	1713.70
MS*Running*Les	0	0	1	7	1518.98	346.975	131.144	1198.08	1839.88
MS*Running*Les	0	1	0	9	1247.90	173.116	57.705	1114.83	1380.97
MS*Running*Les	0	1	1	8	1184.43	278.247	98.375	951.81	1417.05
MS*Running*Les	1	0	0	7	1662.10	249.585	94.334	1431.27	1892.92
MS*Running*Les	1	0	1	7	1481.16	332.473	125.663	1173.67	1788.65
MS*Running*Les	1	1	0	8	1314.16	125.377	44.327	1209.34	1418.98
MS*Running*Les	1	1	1	9	1391.15	432.445	144.148	1058.74	1723.56

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Duration in open arms (s) Mean	Duration in open arms (s) Std.Dev.	Duration in open arms (s) Std.Err	Duration in open arms (s) -95.00%	Duration in open arms (s) +95.00%
Total				62	32.2877	19.1757	2.43531	27.4179	37.1574
MS	0			31	33.1564	21.3372	3.83228	25.3299	40.9830
MS	1			31	31.4189	17.0538	3.06296	25.1635	37.6743
Running	0			28	34.8392	18.0655	3.41406	27.8341	41.8443
Running	1			34	30.1864	20.0650	3.44112	23.1854	37.1874
Lesion	0			31	30.6762	17.0304	3.05875	24.4294	36.9230
Lesion	1			31	33.8991	21.2666	3.81960	26.0984	41.6998
MS*Running	0	0		14	36.3668	23.1706	6.19261	22.9885	49.7452
MS*Running	0	1		17	30.5126	20.0247	4.85670	20.2168	40.8083
MS*Running	1	0		14	33.3116	11.6587	3.11593	26.5800	40.0431
MS*Running	1	1		17	29.8602	20.7161	5.02440	19.2089	40.5114
MS*Lesion	0	0		16	30.1752	18.8489	4.71223	20.1313	40.2191
MS*Lesion	0	1		15	36.3365	23.9571	6.18571	23.0694	49.6035
MS*Lesion	1	0		15	31.2107	15.5001	4.00211	22.6270	39.7943
MS*Lesion	1	1		16	31.6141	18.9036	4.72591	21.5410	41.6871
Running*Lesion	0	0		14	33.7164	16.7505	4.47677	24.0449	43.3879
Running*Lesion	0	1		14	35.9620	19.8629	5.30858	24.4935	47.4305
Running*Lesion	1	0		17	28.1725	17.3521	4.20851	19.2509	37.0942
Running*Lesion	1	1		17	32.2002	22.8179	5.53415	20.4683	43.9321
MS*Running*Les	0	0	0	7	32.9312	22.1318	8.36504	12.4626	53.3997
MS*Running*Les	0	0	1	7	39.8025	25.4141	9.60563	16.2984	63.3067
MS*Running*Les	0	1	0	9	28.0316	16.9403	5.64679	15.0101	41.0532
MS*Running*Les	0	1	1	8	33.3037	23.9114	8.45396	13.3132	53.2941
MS*Running*Les	1	0	0	7	34.5016	10.8014	4.08255	24.5120	44.4913
MS*Running*Les	1	0	1	7	32.1215	13.2110	4.99331	19.9033	44.3397
MS*Running*Les	1	1	0	8	28.3311	18.9788	6.71003	12.4644	44.1978
MS*Running*Les	1	1	1	9	31.2194	23.2105	7.73683	13.3782	49.0606

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	Frequency of entry into open arms Mean	Frequency of entry into open arms Std.Dev.	Frequency of entry into open arms Std.Err	Frequency of entry into open arms -95.00%	Frequency of entry into open arms +95.00%
Total				62	6.77419	3.33594	0.42366	5.92702	7.6213
MS	0			31	6.61290	3.47061	0.62334	5.33987	7.8859
MS	1			31	6.93548	3.24484	0.58279	5.74526	8.1257
Running	0			28	7.00000	2.99382	0.56577	5.83911	8.1608
Running	1			34	6.58823	3.62748	0.62210	5.32254	7.8539
Lesion	0			31	7.00000	3.26598	0.58658	5.80202	8.1979
Lesion	1			31	6.54838	3.44324	0.61842	5.28539	7.8113
MS*Running	0	0		14	6.71428	3.42902	0.91644	4.73442	8.6941
MS*Running	0	1		17	6.52941	3.60759	0.87496	4.67456	8.3842
MS*Running	1	0		14	7.28571	2.58482	0.69082	5.79328	8.7781
MS*Running	1	1		17	6.64705	3.75734	0.91129	4.71521	8.5789
MS*Lesion	0	0		16	6.43750	2.80401	0.70100	4.94334	7.9316
MS*Lesion	0	1		15	6.80000	4.16104	1.07437	4.49569	9.1043
MS*Lesion	1	0		15	7.60000	3.69942	0.95518	5.55132	9.6486
MS*Lesion	1	1		16	6.31250	2.72565	0.68141	4.86010	7.7649
Running*Lesion	0	0		14	7.14285	2.87849	0.76930	5.48086	8.8048
Running*Lesion	0	1		14	6.85714	3.20713	0.85714	5.00539	8.7088
Running*Lesion	1	0		17	6.88235	3.63803	0.88235	5.01184	8.7528
Running*Lesion	1	1		17	6.29411	3.70413	0.89838	4.38962	8.1986
MS*Running*Les	0	0	0	7	6.14285	3.33809	1.26168	3.05563	9.2300
MS*Running*Les	0	0	1	7	7.28571	3.68394	1.39239	3.87863	10.6927
MS*Running*Les	0	1	0	9	6.66666	2.50000	0.83333	4.74499	8.5883
MS*Running*Les	0	1	1	8	6.37500	4.74906	1.67904	2.40468	10.3453
MS*Running*Les	1	0	0	7	8.14285	2.11570	0.79966	6.18616	10.0995
MS*Running*Les	1	0	1	7	6.42857	2.87849	1.08796	3.76641	9.0907
MS*Running*Les	1	1	0	8	7.12500	4.79396	1.69492	3.11714	11.1328
MS*Running*Les	1	1	1	9	6.22222	2.77388	0.92462	4.09025	8.3544

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Duration in closed arms (s) Mean	Duration in closed arms (s) Std.Dev.	Duration in closed arms (s) Std.Err	Duration in closed arms (s) -95.00%	Duration in closed arms (s) +95.00%
Total				62	181.809	30.0257	3.8132	174.184	189.434
MS	0			31	178.572	36.2019	6.5020	165.293	191.851
MS	1			31	185.046	22.3809	4.0197	176.836	193.255
Running	0			28	181.566	25.3029	4.7818	171.754	191.377
Running	1			34	182.009	33.8018	5.7969	170.215	193.803
Lesion	0			31	182.740	24.0766	4.3243	173.908	191.571
Lesion	1			31	180.878	35.3788	6.3542	167.901	193.855
MS*Running	0	0		14	177.653	32.3287	8.6402	158.987	196.319
MS*Running	0	1		17	179.328	40.0849	9.7220	158.719	199.938
MS*Running	1	0		14	185.479	15.8619	4.2392	176.320	194.637
MS*Running	1	1		17	184.689	27.1012	6.5730	170.755	198.623
MS*Lesion	0	0		16	182.192	27.3264	6.8316	167.631	196.753
MS*Lesion	0	1		15	174.710	44.4673	11.4814	150.085	199.335
MS*Lesion	1	0		15	183.323	21.0095	5.4246	171.689	194.958
MS*Lesion	1	1		16	186.660	24.1679	6.0420	173.782	199.538
Running*Lesion	0	0		14	180.290	22.0533	5.8940	167.557	193.023
Running*Lesion	0	1		14	182.842	28.9805	7.7453	166.109	199.575
Running*Lesion	1	0		17	184.757	26.1185	6.3346	171.328	198.186
Running*Lesion	1	1		17	179.260	40.7224	9.8766	158.323	200.198
MS*Running*Les	0	0	0	7	180.568	30.2907	11.4488	152.553	208.582
MS*Running*Les	0	0	1	7	174.738	36.4298	13.7691	141.046	208.430
MS*Running*Les	0	1	0	9	183.456	26.6059	8.8686	163.004	203.907
MS*Running*Les	0	1	1	8	174.685	53.0768	18.7654	130.312	219.059
MS*Running*Les	1	0	0	7	180.012	11.6638	4.4085	169.225	190.799
MS*Running*Les	1	0	1	7	190.946	18.4215	6.9626	173.909	207.983
MS*Running*Les	1	1	0	8	186.221	27.3062	9.6542	163.392	209.050
MS*Running*Les	1	1	1	9	183.327	28.4971	9.4990	161.422	205.232

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Duration in centra square (s) Mean	Duration in centra square (s) Std.Dev.	Duration in centra square (s) Std.Err	Duration in centra square (s) -95.00%	Duration in centra square (s) +95.00%
Total				62	33.2364	15.2647	1.9386	29.3599	37.1129
MS	0			31	35.6045	19.0050	3.4134	28.6334	42.5756
MS	1			31	30.8682	10.0503	1.8050	27.1818	34.5547
Running	0			28	30.9277	11.4087	2.1560	26.5038	35.3515
Running	1			34	35.1377	17.7757	3.0485	28.9354	41.3399
Lesion	0			31	33.9169	11.3527	2.0390	29.7527	38.0812
Lesion	1			31	32.5558	18.5458	3.3309	25.7531	39.3585
MS*Running	0	0		14	33.3130	11.6100	3.1029	26.6096	40.0165
MS*Running	0	1		17	37.4916	23.6503	5.7360	25.3318	49.6515
MS*Running	1	0		14	28.5423	11.1032	2.9674	22.1315	34.9532
MS*Running	1	1		17	32.7837	8.9773	2.1773	28.1680	37.3994
MS*Lesion	0	0		16	34.9654	12.6668	3.1667	28.2157	41.7151
MS*Lesion	0	1		15	36.2863	24.5175	6.3303	22.7089	49.8636
MS*Lesion	1	0		15	32.7986	10.0833	2.6035	27.2146	38.3826
MS*Lesion	1	1		16	29.0585	9.9951	2.4987	23.7325	34.3846
Running*Lesion	0	0		14	33.3265	10.8113	2.8894	27.0842	39.5688
Running*Lesion	0	1		14	28.5289	11.8765	3.1741	21.6716	35.3862
Running*Lesion	1	0		17	34.4032	12.0884	2.9318	28.1879	40.6186
Running*Lesion	1	1		17	35.8721	22.4594	5.4472	24.3245	47.4197
MS*Running*Lesion	0	0	0	7	33.8338	10.9953	4.1558	23.6648	44.0029
MS*Running*Lesion	0	0	1	7	32.7922	13.0584	4.9356	20.7152	44.8693
MS*Running*Lesion	0	1	0	9	35.8455	14.4283	4.8094	24.7549	46.9362
MS*Running*Lesion	0	1	1	8	39.3436	32.1428	11.3642	12.4715	66.2156
MS*Running*Lesion	1	0	0	7	32.8191	11.4784	4.3384	22.2033	43.4349
MS*Running*Lesion	1	0	1	7	24.2656	9.6269	3.6386	15.3621	33.1690
MS*Running*Lesion	1	1	0	8	32.7807	9.5086	3.3618	24.8313	40.7301
MS*Running*Lesion	1	1	1	9	32.7864	9.0594	3.0198	25.8227	39.7501

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	Maximun velocity (cm/s) Mean	Maximun velocity (cm/s) Std.Dev.	Maximun velocity (cm/s) Std.Err	Maximun velocity (cm/s) -95.00%	Maximun velocity (cm/s) +95.00%
Total				62	152.161	289.233	36.732	78.709	225.612
MS	0			31	139.174	221.301	39.747	58.00	220.348
MS	1			31	165.147	347.530	62.418	37.672	292.623
Running	0			28	114.023	177.551	33.554	45.176	182.870
Running	1			34	183.568	355.800	61.019	59.424	307.713
Lesion	0			31	126.128	194.300	34.897	54.859	197.398
Lesion	1			31	178.193	361.866	64.993	45.46	310.927
MS*Running	0	0		14	134.586	226.642	60.572	3.727	265.445
MS*Running	0	1		17	142.953	223.736	54.264	27.918	257.987
MS*Running	1	0		14	93.460	114.875	30.701	27.133	159.787
MS*Running	1	1		17	224.184	455.561	110.489	-10.044	458.412
MS*Lesion	0	0		16	121.880	212.938	53.234	8.414	235.347
MS*Lesion	0	1		15	157.621	235.918	60.913	26.974	288.268
MS*Lesion	1	0		15	130.660	179.651	46.385	31.172	230.147
MS*Lesion	1	1		16	197.479	457.304	114.326	-46.201	441.160
Running*Lesion	0	0		14	148.669	228.810	61.152	16.558	280.780
Running*Lesion	0	1		14	79.377	102.637	27.431	20.116	138.638
Running*Lesion	1	0		17	107.565	165.644	40.174	22.399	192.732
Running*Lesion	1	1		17	259.571	470.517	114.117	17.654	501.489
MS*Running*Lesion	0	0	0	7	162.281	297.451	112.426	-112.81	437.378
MS*Running*Lesion	0	0	1	7	106.890	145.007	54.807	-27.219	241.000
MS*Running*Lesion	0	1	0	9	90.457	126.965	42.321	-7.137	188.051
MS*Running*Lesion	0	1	1	8	202.010	297.432	105.158	-46.649	450.670
MS*Running*Lesion	1	0	0	7	135.056	156.600	59.189	-9.775	279.888
MS*Running*Lesion	1	0	1	7	51.863	5.582	2.109	46.701	57.026
MS*Running*Lesion	1	1	0	8	126.813	208.549	73.733	-47.538	301.164
MS*Running*Lesion	1	1	1	9	310.736	599.255	199.751	-149.89	771.365

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet)								
	Level o Factor	Level of Factor	Level of Factor	N	Mean velocity (cm/s) Mean	Mean velocity (cm/s) Std.Dev.	Mean velocity (cm/s) Std.Err	Mean velocity (cm/s) -95.00%	Mean velocity (cm/s) +95.00%
Total				62	5.69608	1.28079	0.16266	5.37082	6.02134
MS	0			31	5.47975	1.19172	0.21404	5.04263	5.91688
MS	1			31	5.91241	1.34855	0.24220	5.41775	6.40706
Running	0			28	6.25589	1.18720	0.22436	5.79554	6.71624
Running	1			34	5.23506	1.18077	0.20250	4.82307	5.64705
Lesion	0			31	5.74783	1.04504	0.18769	5.36450	6.13115
Lesion	1			31	5.64433	1.49595	0.26868	5.09561	6.19305
MS*Running	0	0		14	6.11691	1.18431	0.31652	5.43311	6.80071
MS*Running	0	1		17	4.95504	0.93569	0.22694	4.47395	5.43613
MS*Running	1	0		14	6.39486	1.21783	0.32548	5.69171	7.09802
MS*Running	1	1		17	5.51509	1.35404	0.32840	4.81890	6.21127
MS*Lesion	0	0		16	5.50415	0.98833	0.24708	4.97751	6.03080
MS*Lesion	0	1		15	5.45373	1.41256	0.36472	4.67148	6.23598
MS*Lesion	1	0		15	6.00775	1.07398	0.27730	5.41300	6.60250
MS*Lesion	1	1		16	5.82302	1.59469	0.39867	4.97327	6.67278
Running*Lesion	0	0		14	6.42212	1.06403	0.28437	5.80776	7.03647
Running*Lesion	0	1		14	6.08966	1.31744	0.35210	5.32899	6.85033
Running*Lesion	1	0		17	5.19253	0.63433	0.15385	4.86639	5.51868
Running*Lesion	1	1		17	5.27759	1.57142	0.38112	4.46964	6.08554
MS*Running*Les	0	0	0	7	6.06789	1.04204	0.39385	5.10416	7.03163
MS*Running*Les	0	0	1	7	6.16593	1.39552	0.52745	4.87529	7.45658
MS*Running*Les	0	1	0	9	5.06569	0.72300	0.24100	4.50994	5.62144
MS*Running*Les	0	1	1	8	4.83055	1.17061	0.41387	3.85189	5.80921
MS*Running*Les	1	0	0	7	6.77634	1.03652	0.39177	5.81771	7.73496
MS*Running*Les	1	0	1	7	6.01339	1.34145	0.50702	4.77275	7.25403
MS*Running*Les	1	1	0	8	5.33523	0.52759	0.18653	4.89415	5.77632
MS*Running*Les	1	1	1	9	5.67496	1.83363	0.61121	4.26551	7.08441

A5.1.5.1.1.3. EPM P49 Full Five Minutes Distance travelled ANOVA

Effect	Univariate Tests of Significance for Total distance (cm) (P49 Full five minu Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	12206909	1	12206909	1462.48	0.00000
MS	16116	1	16116	1.931	0.17036
Running	98078	1	98078	11.751	0.00117
Lesion	1761	1	1761	0.211	0.64780
MS*Running	1768	1	1768	0.212	0.64719
MS*Lesion	501	1	501	0.060	0.80735
Running*Lesion	2533	1	2533	0.304	0.58394
MS*Running*Lesion	11956	1	11956	1.432	0.23659
Error	45072	54	8346		

A5.1.5.1.1.4. EPM P49 Full Five minutes Distance Travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total distance (cm) (P49 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 83467., df = 54.000

Cell No.	Running	{1} 1537.3	{2} 1286.5
1	0		0.001384
2	1	0.001384	

A5.1.5.1.1.5. EPM P49 Full Five Minutes Open Arm Duration ANOVA

Univariate Tests of Significance for Duration in open arms (s) (P49 Full fiv
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	64893.74	1	64893.74	161.556	0.000000
MS	59.73	1	59.73	0.1487	0.701290
Running	326.91	1	326.91	0.8139	0.370988
Lesion	153.37	1	153.37	0.3818	0.539228
MS*Running	17.93	1	17.93	0.0446	0.833471
MS*Lesion	129.71	1	129.71	0.3229	0.572207
Running*Lesion	12.90	1	12.90	0.0321	0.858450
MS*Running*Lesion	45.19	1	45.19	0.1125	0.738601
Error	21690.69	54	401.68		

A5.1.5.1.1.6. EPM P49 Full Five Minutes Open Arm Frequency ANOVA

Univariate Tests of Significance for Frequency of entry into open arms (P4
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2834.420	1	2834.420	233.619	0.000000
MS	2.010	1	2.010	0.1657	0.685588
Running	2.487	1	2.487	0.2050	0.652534
Lesion	2.988	1	2.988	0.2463	0.621729
MS*Running	0.672	1	0.672	0.0554	0.814864
MS*Lesion	11.526	1	11.526	0.9500	0.334077
Running*Lesion	0.372	1	0.372	0.0307	0.861669
MS*Running*Lesion	4.834	1	4.834	0.3984	0.530579
Error	655.163	54	12.133		

A5.1.5.1.1.7. EPM P49 Full Five Minutes Closed Arm Duration ANOVA

Effect	Univariate Tests of Significance for Duration in closed arms (s) (P49 Full fiv Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	202556	1	202556	2047.57	0.00000
MS	702	1	702	0.709	0.40343
Running	2	1	2	0.002	0.96477
Lesion	41	1	41	0.042	0.83898
MS*Running	17	1	17	0.017	0.89538
MS*Lesion	491	1	491	0.496	0.48409
Running*Lesion	269	1	269	0.272	0.60390
MS*Running*Lesion	114	1	114	0.115	0.73604
Error	5342(	54	989		

A5.1.5.1.1.8. EPM P49 Full Five Minutes Central Square Duration ANOVA

Effect	Univariate Tests of Significance for Duration in central square (s) (P49 Full Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	67017.5	1	67017.5	272.466	0.00000
MS	351.88	1	351.88	1.4306	0.23689
Running	278.39	1	278.39	1.1318	0.29211
Lesion	35.55	1	35.55	0.1445	0.70529
MS*Running	0.01	1	0.01	0.0000	0.99600
MS*Lesion	116.03	1	116.03	0.4717	0.49513
Running*Lesion	164.40	1	164.40	0.6684	0.41720
MS*Running*Lesion	15.48	1	15.48	0.0629	0.80285
Error	13282.1	54	245.97		

A5.1.5.1.1.9. EPM P49 Full Five Minutes Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for Maximum velocity (cm/s) (P49 Full fiv Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	134801	1	134801	15.3899	0.00024
MS	3783	1	3783	0.0431	0.83616
Running	71897	1	71897	0.8208	0.36896
Lesion	2358(	1	2358(	0.2692	0.60593
MS*Running	49519	1	49519	0.5653	0.45538
MS*Lesion	1903	1	1903	0.0217	0.88336
Running*Lesion	18052	1	18052	2.0610	0.15687
MS*Running*Lesion	9615	1	9615	0.1097	0.74168
Error	472988	54	87591		

A5.1.5.1.1.10. EPM P49 Full Five Minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for Mean velocity (cm/s) (P49 Full five mir Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2021.33	1	2021.33	1398.23	0.00000
MS	2.672	1	2.672	1.848	0.17964
Running	16.242	1	16.242	11.235	0.00147
Lesion	0.301	1	0.301	0.208	0.65009
MS*Running	0.298	1	0.298	0.206	0.65141
MS*Lesion	0.078	1	0.078	0.054	0.81669
Running*Lesion	0.567	1	0.567	0.392	0.53364
MS*Running*Lesion	1.975	1	1.975	1.366	0.24755
Error	78.064	54	1.446		

A5.1.5.1.1.11. EPM P49 Full Five Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable Mean velocity (cm/s) (P49 Full five minutes spread Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.4456, df = 54.000 Running	{1} 6.2559	{2} 5.2351
1	0		0.001702
2	1	0.001702	

A5.1.5.1.2.1.1. EPM P49 1 minute intervals data spreadsheet

	P49							
	1 MS	2 Running	3 Lesion	4 1. Total distance (cm)	5 1. Arena Duration (s)	6 1. Duration in open arm (s)	7 1. Frequency of entry into open arms	8 1. Duration in closed arms (s)
164	1	1	0	308.92069	49	29.000008	4	12.666661
129	1	1	1	483.03415	49	18.16666	2	27.166675
148	1	0	0	554.63673	49	16.999992	4	27.833342
141	1	0	1	399.53087	49	16.666659	2	24.333343
207	0	1	1	249.06348	49	0	0	43.000003
176	0	0	0	338.33203	49	7.999997	3	32.666654
174	0	1	0	317.49052	49	1.166666	3	42.000003
227	0	0	1	284.85440	49	4.666685	1	40.999984
122	1	1	0	322.47537	49	0.833333	1	44.166668
135	1	0	1	380.52236	49	5.166665	4	39.999985
197	1	0	0	564.15532	49	17.16666	3	29.166675
195	1	1	1	387.81221	49	15.666661	5	25.666676
154	1	0	1	569.85814	49	7.499997	1	38.500006
167	0	0	0	492.55796	49	15.66666	3	26.333342
222	0	1	0	429.28384	49	19.999992	2	23.166677
203	0	1	1	350.29833	49	26.333323	3	15.66668
193	0	0	1	516.20398	49	21.500011	3	21.166658
182	1	1	1	432.80221	49	19.500012	3	24.833322
209	1	0	1	413.19074	49	24.333324	2	22.166678
144	1	0	0	516.05821	49	14.333328	2	28.333342
216	1	1	0	462.13797	49	11.499995	3	23.833325
117	0	0	1	455.65491	49	21.499992	4	22.833344
188	0	1	1	367.08043	49	12.499995	3	26.666656
169	0	0	0	396.97715	49	29.83334	4	15.666661
234	0	0	1	426.83158	49	11.999994	2	31.500007
126	0	0	1	364.86096	49	37.666673	4	8.83333
138	1	1	0	439.90905	49	11.999995	2	25.833323
157	1	0	1	493.64538	49	17.999993	2	24.000011
131	0	1	0	513.05027	49	23.166657	3	20.500012
191	0	1	1	417.84666	49	11.499995	1	28.00001
160	0	0	0	403.80188	49	10.166663	4	30.999987
186	1	0	0	387.05242	49	13.16666	2	30.83334
220	1	1	1	334.64415	49	8.666663	1	34.333339
190	1	0	0	500.55950	49	5.10415646	1	39.022197
143	1	0	1	427.65286	49	13.5671772	4	27.496584
196	1	1	0	404.52103	49	21.5033172	8	21.437457
145	1	1	1	327.20231	49	10.7351936	2	29.735827
198	1	1	1	455.25505	49	17.5517122	2	21.964337
139	1	0	0	450.39216	49	23.0180991	6	20.482485
210	0	1	1	442.49170	49	13.1062546	3	32.600741
232	0	1	0	422.84037	49	3.29300417	3	30.098156
171	0	0	0	534.52922	49	5.43345687	1	35.663235
219	0	0	0	468.53577	49	3.22714408	2	37.836715
205	0	0	1	371.35522	49	0	0	42.545711

	P49							
	1 MS	2 Running	3 Lesion	4 1. Duration in central square (s)	5 1. Maximum velocity (cm/s)	6 1. Mean velocity (cm/s)	7 2. Total distance (cm)	8 2. Arena Duration (s)
164	1	1	0	7.333331	31.966399	6.30450682	321.32423	49
129	1	1	1	3.666665	48.530373	9.85784376	361.984903	49
148	1	0	0	4.166666	54.393179	11.3191223	479.037445	49
141	1	0	1	7.999998	44.980164	8.15369506	190.47902	49
207	0	1	1	5.999997	30.372725	5.0829305	194.329815	49
176	0	0	0	8.333349	42.064919	6.90473731	294.460838	49
174	0	1	0	5.833331	39.422470	6.4794017	249.033445	49
227	0	0	1	3.333331	48.782691	5.81335698	242.932731	49
122	1	1	0	3.999999	47.392934	6.58113403	285.220057	49
135	1	0	1	3.83335	51.041389	7.7657653	392.156959	49
197	1	0	0	2.666665	51.896519	11.5133796	512.111391	49
195	1	1	1	7.666663	44.398722	7.91453858	247.964951	49
154	1	0	1	2.999997	53.904142	11.6297629	408.537187	49
167	0	0	0	6.999998	48.239668	10.0522072	333.55578	49
222	0	1	0	5.833331	47.802533	8.76089798	375.37058	49
203	0	1	1	6.999997	35.980315	7.14894895	308.22324	49
193	0	0	1	6.333331	50.420694	10.5347797	409.075808	49
182	1	1	1	4.666666	42.249122	8.83270086	320.21619	49
209	1	0	1	2.499998	39.785046	8.43246762	551.800082	49
144	1	0	0	6.33333	52.342354	10.5318053	412.51002	49
216	1	1	0	13.66668	56.466115	9.43139176	333.35925	49
117	0	0	1	4.666664	53.696198	9.29908503	370.644211	49
188	0	1	1	9.833349	58.506851	7.4914414	312.512198	49
169	0	0	0	3.499999	38.629789	8.1015783	447.755777	49
234	0	0	1	5.499999	41.550880	8.71085238	405.892045	49
126	0	0	1	2.499997	50.108504	7.44614478	582.581555	49
138	1	1	0	11.166682	38.600467	8.97773954	335.810588	49
157	1	0	1	6.999996	49.565481	10.0743983	279.700829	49
131	0	1	0	5.333331	59.938001	10.4704192	413.012068	49
191	0	1	1	9.499995	49.211145	8.52748713	323.121727	49
160	0	0	0	7.83335	48.135550	8.24085836	383.077556	49
186	1	0	0	5	53.875945	7.89903259	348.580195	49
220	1	1	1	5.999998	40.336859	6.82947569	284.106573	49
190	1	0	0	4.8736462	67.057517	10.428344	283.118993	49
143	1	0	1	7.936238	47.809433	8.90945256	388.709699	49
196	1	1	0	6.0592257	51.820508	8.4275385	295.447006	49
145	1	1	1	8.5289788	40.266885	6.81672845	352.170485	49
198	1	1	1	9.48395	64.106177	9.4844993	596.907585	49
139	1	0	0	5.499415	79.770930	9.3831889	381.731614	49
210	0	1	1	3.2930042	57.314568	9.21859566	316.036953	49
232	0	1	0	15.60884	53.831199	8.80919214	329.648212	49
171	0	0	0	7.903308	58.247707	11.1360479	520.867041	49
219	0	0	0	7.93614	55.709241	9.76118151	332.162039	49
205	0	0	1	6.4542882	59.550684	7.73658263	405.271238	49

	P49							
	1 MS	2 Running	3 Lesion	4 2. Duration in open arms (s)	5 2. Frequency of entry into open arms	6 2. Duration in closed arms (s)	7 2. Duration in central square (s)	8 2. Maximum velocity (cm/s)
164	1	1	0	8.83331	1	34.166692	5.999998	37.3440966
129	1	1	1	4.166665	2	34.166673	10.666662	40.9689258
148	1	0	0	6.499998	2	37.000005	5.499997	39.950524
141	1	0	1	0	0	47.166667	1.833333	38.5709078
207	0	1	1	0	0	48.000001	0.999999	34.7638822
176	0	0	0	7.999997	1	38.000024	2.999979	48.2183191
174	0	1	0	2.333332	2	35.666673	10.999995	35.786685
227	0	0	1	5.833311	1	42.333356	0.833333	32.3321476
122	1	1	0	8.499996	1	23.500011	16.999993	41.9456911
135	1	0	1	8.999998	3	33.500027	6.499975	52.0731046
197	1	0	0	7.166664	1	37.333338	4.499998	47.6262515
195	1	1	1	2.499999	1	38.833337	7.666664	31.872694
154	1	0	1	6.499997	1	38.000005	4.499998	48.1355011
167	0	0	0	11.333329	2	28.666676	8.999995	42.4861653
222	0	1	0	11.166662	3	31.83334	5.999998	53.655329
203	0	1	1	15.499994	2	25.333342	8.166664	34.0591688
193	0	0	1	0.166647	1	39.000026	9.833327	44.6539211
182	1	1	1	4.666644	2	25.166696	19.16666	38.8399575
209	1	0	1	20.166658	5	17.000013	11.833329	48.4200935
144	1	0	0	17.499994	4	23.166637	8.333369	50.0639078
216	1	1	0	4.333331	1	35.66669	8.999979	43.4441639
117	0	0	1	8.999996	3	27.500009	12.499995	41.3137213
188	0	1	1	11.166703	4	24.833323	12.999974	43.1705058
169	0	0	0	13.666641	3	30.333362	4.999997	40.9583128
234	0	0	1	19.833326	2	21.666678	7.499996	51.3326728
126	0	0	1	10.666643	3	30.499987	7.83337	55.4767128
138	1	1	0	5.666665	1	23.666697	19.666638	40.6428145
157	1	0	1	9.33337	4	28.999967	10.666663	47.8352282
131	0	1	0	7.999996	2	29.000007	11.999997	49.4737051
191	0	1	1	11.166662	2	29.666674	8.166664	38.6503866
160	0	0	0	10.33333	4	22.333365	16.333305	42.0421848
186	1	0	0	10.166662	1	33.333339	5.499999	42.6419974
220	1	1	1	1.333332	2	39.16667	8.499998	33.9429768
190	1	0	0	0.0329300	1	41.8212509	7.14581904	54.5475324
143	1	0	1	8.4630207	1	37.145283	3.39169629	55.2836404
196	1	1	0	15.016295	4	26.1464531	7.83725192	45.6712723
145	1	1	1	4.2150453	1	39.2198756	5.56507904	42.8776807
198	1	1	1	7.6726997	1	37.112353	4.21494733	149.504147
139	1	0	0	11.624304	1	27.628501	9.74719433	60.820117
210	0	1	1	9.8791105	2	31.57991	7.54097954	41.7577378
232	0	1	0	3.8528148	2	35.7950533	9.35213183	31.9819956
171	0	0	0	7.8373499	1	32.5678112	8.59483888	56.9142344
219	0	0	0	0	0	46.5302469	2.46975313	50.9625958
205	0	0	1	11.393794	6	22.6559667	14.9502389	74.0353479

	P49							
	1 MS	2 Running	3 Lesion	4 2. Mean velocity (cm/s)	5 3. Total distance (cm)	6 3. Arena Duration (s)	7 3. Duration in open arms (s)	8 3. Frequency of entry into open arms
164	1	1	0	6.55764108	317.435798	49	18.499992	2
129	1	1	1	7.38745026	326.030236	49	0	0
148	1	0	0	9.77627648	308.610325	49	0	0
141	1	0	1	3.88732811	68.1849119	49	0	0
207	0	1	1	3.96591641	138.693027	49	0	0
176	0	0	0	6.00940752	254.741059	49	8.166663	1
174	0	1	0	5.08231751	208.618827	49	0	0
227	0	0	1	4.95781301	136.701281	49	0	0
122	1	1	0	5.82081982	175.704563	49	0	0
135	1	0	1	8.00320551	338.412299	49	6.166664	2
197	1	0	0	10.4512568	315.231497	49	6.33333	1
195	1	1	1	5.06051143	144.303575	49	0	0
154	1	0	1	8.33749695	311.254799	49	8.83333	1
167	0	0	0	6.80726421	246.074768	49	0	0
222	0	1	0	7.66062745	236.318067	49	0	0
203	0	1	1	6.29027312	143.279061	49	0	0
193	0	0	1	8.34848882	346.247577	49	16.833327	2
182	1	1	1	6.5350272	242.221536	49	2.499999	1
209	1	0	1	11.26123	307.092591	49	9.33333	1
144	1	0	0	8.41857534	154.913096	49	2.333332	1
216	1	1	0	6.80325235	229.537065	49	0	0
117	0	0	1	7.56417063	224.948701	49	14.833386	5
188	0	1	1	6.37780194	306.204692	49	12.999955	2
169	0	0	0	9.13787717	329.513229	49	7.833389	2
234	0	0	1	8.28351461	425.431566	49	7.666664	1
126	0	0	1	11.889423	470.950151	49	10.166721	3
138	1	1	0	6.85328059	177.151306	49	0	0
157	1	0	1	5.70818176	334.036879	49	12.499955	2
131	0	1	0	8.42882122	219.110099	49	0	0
191	0	1	1	6.59432403	215.302346	49	1.833333	1
160	0	0	0	7.81791223	272.060537	49	10.833388	2
186	1	0	0	7.11388339	379.039873	49	19.333324	3
220	1	1	1	5.79809581	195.728435	49	0	0
190	1	0	0	5.89832416	298.199991	49	5.1370865	4
143	1	0	1	8.09813492	297.31235	49	8.00200012	2
196	1	1	0	6.15515827	227.33922	49	15.0817631	3
145	1	1	1	7.33689977	371.914169	49	0.42809054	1
198	1	1	1	12.4355996	475.012885	49	26.7721239	4
139	1	0	0	7.95275786	304.722545	49	0	0
210	0	1	1	6.58411635	304.864934	49	2.33783696	4
232	0	1	0	6.86768482	219.854302	49	0	0
171	0	0	0	10.8514184	340.454542	49	0	0
219	0	0	0	6.92005632	234.27561	49	0	0
205	0	0	1	8.44316767	271.28616	49	0	0

	P49							
	1 MS	2 Running	3 Lesion	4 3. Duration in closed arms (s)	5 3. Duration in central square (s)	6 3. Maximum velocity (cm/s)	7 3. Mean velocity (cm/s)	8 4. Total distance (cm)
164	1	1	0	27.666675	2.833333	36.3372475	6.47828413	187.799071
129	1	1	1	47.166668	1.833332	45.0537821	6.65368159	42.7995865
148	1	0	0	43.000001	5.999999	41.9494584	6.29817262	225.171442
141	1	0	1	49	0	11.7372808	1.39152946	70.6831612
207	0	1	1	48.666667	0.333333	34.150779	2.83047134	88.0654633
176	0	0	0	37.000005	3.833332	42.5942526	5.19879884	74.2030694
174	0	1	0	47.833334	1.166666	33.3030022	4.25752867	117.109888
227	0	0	1	48.500001	0.499999	36.9123272	2.78982316	84.1001082
122	1	1	0	43.666669	5.333331	40.5669726	3.58580876	51.6547374
135	1	0	1	35.833338	6.999998	50.2938247	6.90637635	314.225449
197	1	0	0	39.000004	3.666666	34.5120004	6.4332978	344.157524
195	1	1	1	47.166668	1.833332	28.2671183	2.94497259	140.707164
154	1	0	1	33.500006	6.666664	42.2517259	6.35214065	206.262951
167	0	0	0	40.500003	8.499997	42.8126334	5.02193536	251.784334
222	0	1	0	46.833334	2.166666	47.1876978	4.82281956	60.4655417
203	0	1	1	48.166667	0.833333	26.9575538	2.92406327	93.4559598
193	0	0	1	22.666618	9.500055	39.9713089	7.06627949	295.795354
182	1	1	1	44.500002	1.999999	26.5939937	4.94329894	198.438426
209	1	0	1	36.666672	2.999998	34.0847057	6.26719738	174.316149
144	1	0	0	27.999989	18.666679	33.9727906	3.16149262	154.069307
216	1	1	0	48.166667	0.833333	39.3865251	4.68443123	191.154034
117	0	0	1	27.333281	6.833333	30.0398003	4.59079125	220.2235
188	0	1	1	28.500047	7.499998	39.4621982	6.24907863	251.628437
169	0	0	0	33.33328	7.833331	42.0952552	6.72476309	236.113594
234	0	0	1	35.33328	6.000056	50.6324105	8.68228016	273.525376
126	0	0	1	33.666652	5.166627	52.7265714	9.61123139	346.352809
138	1	1	0	43.833335	5.166665	32.8221666	3.61533353	261.496671
157	1	0	1	33.83338	2.666665	47.0402429	6.81708194	217.951122
131	0	1	0	40.500003	8.499997	40.0002424	4.47163693	51.3037667
191	0	1	1	44.833334	2.333333	36.2086641	4.39392698	171.451031
160	0	0	0	35.499945	2.666667	35.9581618	5.55225812	174.196033
186	1	0	0	20.666679	8.999997	49.0539848	7.73551009	125.63756
220	1	1	1	44.166669	4.833331	30.6072927	3.99445912	66.6008255
190	1	0	0	30.789687	13.073226	56.7592	6.21251223	322.774389
143	1	0	1	28.9126746	12.085325	52.2807636	6.19401967	195.291747
196	1	1	0	27.7270951	6.1911418	37.9386802	4.73624323	234.055191
145	1	1	1	44.8508147	3.7210947	38.6233549	7.74822735	272.512663
198	1	1	1	12.9413104	9.2865657	61.2399559	9.89612156	438.000506
139	1	0	0	46.596107	2.4038930	48.868094	6.34839904	278.55787
210	0	1	1	27.628305	19.033858	43.6343045	6.35136549	244.975213
232	0	1	0	41.09679	7.90321	32.9464513	4.58030712	255.000796
171	0	0	0	38.726023	10.273977	52.7013638	7.09281715	177.463748
219	0	0	0	38.2977365	10.702263	35.0313172	4.88075164	251.665035
205	0	0	1	42.2493415	6.7506585	40.3345466	5.6518063	177.04032

	P49							
	1 MS	2 Running	3 Lesion	4 4. Arena Duration (s)	5 4. Duration in open arms (s)	6 4. Frequency of entry into open arms	7 4. Duration in closed arms (s)	8 4. Duration in central square (s)
164	1	1	0	49	0	0	33.333341	15.666659
129	1	1	1	49	0	0	49	0
148	1	0	0	49	1	1	39.16667	8.83333
141	1	0	1	49	0	0	49	0
207	0	1	1	49	0	0	49	0
176	0	0	0	49	0	0	49	0
174	0	1	0	49	0	0	48.666667	0.333333
227	0	0	1	49	0	0	49	0
122	1	1	0	49	0	0	49	0
135	1	0	1	49	0	0	42.333337	6.666663
197	1	0	0	49	19.833404	5	21.666599	7.499997
195	1	1	1	49	0	0	41.833336	7.166664
154	1	0	1	49	0	0	47	2
167	0	0	0	49	17.333326	1	17.16668	14.499994
222	0	1	0	49	0	0	49	0
203	0	1	1	49	0	0	46.333334	2.666666
193	0	0	1	49	0.166666	1	34.833399	13.999935
182	1	1	1	49	0	0	44.333335	4.666665
209	1	0	1	49	0	0	49	0
144	1	0	0	49	0	0	46.833393	2.166607
216	1	1	0	49	0	0	48.166667	0.833333
117	0	0	1	49	5.166605	1	29.666734	14.166661
188	0	1	1	49	11.666662	1	26.333343	10.999995
169	0	0	0	49	3.166685	2	34.833318	10.999997
234	0	0	1	49	15.16674	2	19.499992	14.333268
126	0	0	1	49	19.6666	2	16.500072	12.833328
138	1	1	0	49	11.166662	1	31.166673	6.666665
157	1	0	1	49	0	0	39.833338	9.166662
131	0	1	0	49	0	0	49	0
191	0	1	1	49	0	0	47.833334	1.166666
160	0	0	0	49	1.666607	1	46.00006	1.333333
186	1	0	0	49	0	0	49	0
220	1	1	1	49	0	0	49	0
190	1	0	0	49	0	0	42.117621	6.882378
143	1	0	1	49	0	0	43.533613	5.466386
196	1	1	0	49	0	0	40.800713	8.199286
145	1	1	1	49	0.92204117	1	30.592106	17.485852
198	1	1	1	49	21.6350374	2	17.156943	10.208018
139	1	0	0	49	0	0	41.426090	7.573909
210	0	1	1	49	1.31759367	1	41.590642	6.091763
232	0	1	0	49	0	0	47.419358	1.580642
171	0	0	0	49	0	0	48.506049	0.493950
219	0	0	0	49	0	0	47.518148	1.481851
205	0	0	1	49	0	0	46.431456	2.568543

	P49							
	1 MS	2 Running	3 Lesion	4 4. Maximum velocity (cm/s)	5 4. Mean velocity (cm/s)	6 5. Total distance (cm)	7 5. Arena Duration (s)	8 5. Duration in open arms (s)
164	1	1	0	23.4680875	3.83263611	160.193437	49	0
129	1	1	1	8.8079201	0.873461568	197.152869	49	2.999999
148	1	0	0	33.5197516	4.59533654	220.706117	49	0
141	1	0	1	13.4091957	1.44251433	42.2178154	49	0
207	0	1	1	21.8621837	1.79725509	30.6621778	49	0
176	0	0	0	19.6187879	1.51434892	61.8034074	49	0
174	0	1	0	32.4642956	2.38999837	89.2473389	49	0
227	0	0	1	15.4435297	1.71632951	132.423115	49	0
122	1	1	0	4.36630222	1.05417876	218.48938	49	0
135	1	0	1	40.3878579	6.41276633	209.127908	49	0.833333
197	1	0	0	43.8698845	7.02362606	291.471125	49	1.333254
195	1	1	1	24.7254423	2.87157633	35.4745213	49	0
154	1	0	1	31.7253906	4.20944919	150.719165	49	0
167	0	0	0	45.1938622	5.13845772	251.159096	49	8.33333
222	0	1	0	19.0617718	1.23399122	80.4961408	49	0
203	0	1	1	24.440725	1.90726487	196.788876	49	12.499995
193	0	0	1	34.8339891	6.03664268	73.7184333	49	0
182	1	1	1	31.8058808	4.04976548	133.823618	49	0
209	1	0	1	21.4441094	3.55747379	121.137839	49	0
144	1	0	0	33.3193772	3.14427292	205.537057	49	0
216	1	1	0	43.7143955	3.90110455	148.613139	49	1.833332
117	0	0	1	27.9350118	4.49435891	163.368171	49	0
188	0	1	1	31.1989742	5.13527606	67.466379	49	0
169	0	0	0	33.7657789	4.81864758	207.404962	49	15.333249
234	0	0	1	35.9628446	5.58215269	222.943246	49	6.999918
126	0	0	1	40.3894386	7.06842836	214.682703	49	0
138	1	1	0	36.9884883	5.33666924	45.8989926	49	0
157	1	0	1	31.9775238	4.44798357	188.348675	49	0
131	0	1	0	7.41586455	1.04701627	55.5769238	49	0
191	0	1	1	38.0392442	3.49900257	138.704667	49	0
160	0	0	0	26.5306879	3.55502308	111.448797	49	0
186	1	0	0	20.8593262	2.56403274	46.079149	49	0
220	1	1	1	17.636661	1.35920108	44.0003617	49	0
190	1	0	0	54.594292	6.7244799	318.643729	49	8.89111125
143	1	0	1	41.7579667	4.06858621	102.917899	49	0
196	1	1	0	39.6080429	4.87615957	220.214465	49	1.94287246
145	1	1	1	34.74788	5.6773585	372.286891	49	0
198	1	1	1	175.944687	9.12502879	289.441751	49	11.031564
139	1	0	0	59.1626129	5.80330057	316.512281	49	0
210	0	1	1	55.7067621	5.10366047	156.770643	49	4.90618421
232	0	1	0	56.2842225	5.3125272	194.00065	49	0
171	0	0	0	42.7923808	3.6971688	203.577671	49	0
219	0	0	0	29.4625615	5.24303204	222.044479	49	2.53610321
205	0	0	1	31.6532646	3.68834738	139.610917	49	0

	P49							
	1 MS	2 Running	3 Lesion	4 5. Frequency of entry into open arms	5 5. Duration in closed arms (s)	6 5. Duration in central square (s)	7 5. Maximum velocity (cm/s)	8 5. Mean velocity (cm/s)
164	1	1	0	0	33.166673	15.833327	18.4287521	3.26925472
129	1	1	1	1	39.000005	6.999996	40.7590491	4.02352982
148	1	0	0	0	47.333334	1.666666	35.3874125	4.50420907
141	1	0	1	0	49	0	6.96574885	0.861588431
207	0	1	1	0	49	0	4.27902908	0.625759093
176	0	0	0	0	49	0	21.2969292	1.26129446
174	0	1	0	0	48.333334	0.666666	36.699626	1.82137455
227	0	0	1	0	47.166668	1.833332	32.8300866	2.70251353
122	1	1	0	0	48.5	0.5	35.437293	4.45896846
135	1	0	1	1	42.000003	6.166664	42.1339341	4.26791863
197	1	0	0	1	45.500081	2.166665	41.4374189	5.94839313
195	1	1	1	0	49	0	6.37017315	0.723970257
154	1	0	1	0	48.500001	0.499999	28.8062755	3.07590256
167	0	0	0	1	36.666671	3.999999	40.9953801	5.1256977
222	0	1	0	0	49	0	19.0622546	1.64277903
203	0	1	1	1	27.833341	8.666664	37.7351728	4.0161011
193	0	0	1	0	49	0	22.4026335	1.50445845
182	1	1	1	0	49	0	23.5766894	2.7310953
209	1	0	1	0	49	0	22.6836044	2.47220196
144	1	0	0	0	39.000004	9.999996	36.9289254	4.19463602
216	1	1	0	1	41.666669	5.499999	39.0702798	3.03292265
117	0	0	1	0	48.333334	0.666666	22.2701809	3.33404595
188	0	1	1	0	49	0	32.7430885	1.37686545
169	0	0	0	3	14.333327	19.333424	30.9268301	4.23275658
234	0	0	1	4	32.333419	9.666663	25.0416496	4.54986433
126	0	0	1	0	35.833339	13.166661	32.9951124	4.38128056
138	1	1	0	0	49	0	5.67148862	0.936714552
157	1	0	1	0	48	1	34.5006935	3.8438524
131	0	1	0	0	49	0	7.72571898	1.13422322
191	0	1	1	0	47.000002	1.999998	35.3171432	2.83070877
160	0	0	0	0	49	0	18.9135926	2.27446572
186	1	0	0	0	49	0	2.99867028	0.940391083
220	1	1	1	0	49	0	10.0393077	0.897966875
190	1	0	0	1	34.905942	5.2029466	52.9245195	6.6384243
143	1	0	1	0	49	0	15.681486	2.14412717
196	1	1	0	3	35.301102	11.756025	38.3567873	4.58781054
145	1	1	1	0	40.471119	8.5288808	41.5765841	7.75599241
198	1	1	1	1	28.352863	9.6155722	52.1195014	6.03004853
139	1	0	0	0	41.854181	7.145819	51.7609158	6.59401905
210	0	1	1	3	36.190605	7.90321	37.494673	3.2660616
232	0	1	0	0	34.774222	14.225778	44.9483464	4.04168829
171	0	0	0	0	48.407259	0.5927408	34.5083145	4.24120996
219	0	0	0	2	35.004242	11.459655	34.7843651	4.6259359
205	0	0	1	0	49	0	21.271425	2.9085666

	P49							
	1 MS	2 Running	3 Lesion	4 1. Total distance (cm)	5 1. Arena Duration (s)	6 1. Duration in open arm (s)	7 1. Frequency of entry into open arms	8 1. Duration in closed arms (s)
137	0	1	1	364.93951	49	7.31046925	1	36.387794
250	1	0	0	457.81136	49	20.16668	5	25.833322
271	1	1	0	488.39332	49	11.833329	5	24.666656
301	0	1	1	366.25983	49	20.000011	2	24.666657
305	0	1	0	411.57842	49	11.999994	3	27.000009
309	1	0	1	524.39310	49	11.500015	3	33.33332
306	1	1	1	451.25209	49	22.499991	3	17.66666
312	0	1	1	491.31600	49	24.333343	5	16.499994
313	0	1	0	429.15692	49	24.833322	5	17.333327
315	0	0	0	449.63459	49	14.666661	2	29.000009
314	0	1	0	354.45728	49	20.333345	4	21.499991
317	1	1	1	396.94649	49	12.166661	2	30.166674
319	1	1	0	348.42199	49	2.999999	3	37.333338
318	1	1	0	377.77079	49	13.999994	6	27.166676
320	1	1	1	358.21121	49	10.666663	5	25.666676
322	0	0	1	517.06071	49	15.333327	3	26.333322
323	0	1	0	384.42308	49	18.16666	2	27.666656
324	0	1	0	449.62247	49	22.333343	4	19.499992

	P49							
	1 MS	2 Running	3 Lesion	4 1. Duration in central square (s)	5 1. Maximum velocity (cm/s)	6 1. Mean velocity (cm/s)	7 2. Total distance (cm)	8 2. Arena Duration (s)
137	0	1	1	5.3017367	51.042815	7.60292185	327.616212	49
250	1	0	0	2.999998	47.658489	9.34309273	530.205929	49
271	1	1	0	12.500015	45.422953	9.96721539	406.320217	49
301	0	1	1	4.333332	56.087613	7.47469245	301.775023	49
305	0	1	0	9.999997	39.221882	8.39956368	195.405528	49
309	1	0	1	4.166665	42.300698	10.7019044	549.099978	49
306	1	1	1	8.833349	50.975361	9.20922934	330.503831	49
312	0	1	1	8.166663	45.017591	10.0268611	398.383464	49
313	0	1	0	6.833351	41.174105	8.75830853	354.238737	49
315	0	0	0	5.33333	48.649485	9.17622088	387.226618	49
314	0	1	0	7.166664	45.138822	7.23382537	260.754444	49
317	1	1	1	6.666665	44.953337	8.10095267	376.500224	49
319	1	1	0	8.666663	46.251822	7.11065636	237.86862	49
318	1	1	0	7.83333	73.368199	7.70961149	439.992505	49
320	1	1	1	12.666661	53.572081	7.31043654	483.216882	49
322	0	0	1	7.333351	52.826702	10.5522644	367.391451	49
323	0	1	0	3.166684	50.139276	7.84537263	456.163182	49
324	0	1	0	7.166665	57.005818	9.17597196	347.788987	49

	P49							
	1 MS	2 Running	3 Lesion	4 2. Duration in open arms (s)	5 2. Frequency of entry into open arms	6 2. Duration in closed arms (s)	7 2. Duration in central square (s)	8 2. Maximum velocity (cm/s)
137	0	1	1	0	0	47.5840082	1.41599179	43.2913338
250	1	0	0	10.666642	4	28.833322	9.500036	62.8936291
271	1	1	0	18.166659	4	21.666697	9.166644	58.2597867
301	0	1	1	8.499977	2	23.166657	17.333366	45.0441654
305	0	1	0	0	0	30.500007	18.499993	37.7307328
309	1	0	1	16.666641	4	18.1667	14.166659	51.3757482
306	1	1	1	15.333327	2	26.666695	6.999978	47.5990736
312	0	1	1	24.49997	8	12.500034	11.999996	43.8433073
313	0	1	0	8.33333	1	26.999989	13.666681	37.3488209
315	0	0	0	8.500036	2	30.833302	9.666662	54.294296
314	0	1	0	0.99998	1	44.500021	3.499999	36.6423797
317	1	1	1	0	0	41.500002	7.499998	36.9695375
319	1	1	0	0.666666	1	45.833334	2.5	58.6028407
318	1	1	0	4.999999	2	37.500005	6.499996	48.2611801
320	1	1	1	15.166659	3	27.500009	6.333332	54.8207068
322	0	0	1	3	2	33.333359	12.666641	49.8505311
323	0	1	0	16.666661	4	23.00003	9.333309	41.9901478
324	0	1	0	11.333308	4	21.333324	16.333368	52.517212

	P49							
	1 MS	2 Running	3 Lesion	4 2. Mean velocity (cm/s)	5 3. Total distance (cm)	6 3. Arena Duration (s)	7 3. Duration in open arms (s)	8 3. Frequency of entry into open arms
137	0	1	1	6.82535141	183.901715	49	0	0
250	1	0	0	10.8205334	224.703467	49	1.333332	1
271	1	1	0	8.2922524	229.656753	49	0	0
301	0	1	1	6.1586766	137.342548	49	0	0
305	0	1	0	3.98786928	181.102395	49	0	0
309	1	0	1	11.2061255	377.746268	49	10.833329	1
306	1	1	1	6.7449784	271.922728	49	7.166664	1
312	0	1	1	8.13027872	311.327844	49	22.166659	2
313	0	1	0	7.22936462	200.333493	49	7.166664	3
315	0	0	0	7.90258652	257.027811	49	8.33329	1
314	0	1	0	5.32152209	247.746008	49	2.166666	1
317	1	1	1	7.68367959	145.557282	49	9.499996	1
319	1	1	0	4.85446404	259.372313	49	0	0
318	1	1	0	8.9794436	282.036151	49	7.999996	2
320	1	1	1	9.86157208	218.080373	49	0.666667	2
322	0	0	1	7.49778759	352.043783	49	9.33333	1
323	0	1	0	9.30945631	200.627787	49	2.666666	3
324	0	1	0	7.09773736	206.696436	49	0	0

	P49							
	1 MS	2 Running	3 Lesion	4 3. Duration in closed arms (s)	5 3. Duration in central square (s)	6 3. Maximum velocity (cm/s)	7 3. Mean velocity (cm/s)	8 4. Total distance (cm)
137	0	1	1	48.4731193	0.5268806	38.5176398	3.83129338	258.252038
250	1	0	0	36.666711	10.999957	36.3679744	4.58578661	191.375165
271	1	1	0	45.500001	3.499999	26.7496049	4.68687466	176.258177
301	0	1	1	39.000044	9.999956	35.312227	2.80291041	40.4518364
305	0	1	0	48.5	0.5	28.3453928	3.69596829	63.4265538
309	1	0	1	34.500005	3.666666	46.1514888	7.70911031	180.841157
306	1	1	1	33.500007	8.333329	44.475012	5.54944582	221.349383
312	0	1	1	21.166678	5.666663	49.3258676	6.35363313	101.039609
313	0	1	0	25.333383	16.499953	32.4775602	4.0884402	238.688076
315	0	0	0	37.500044	3.166666	41.9115558	5.24546793	201.620276
314	0	1	0	30.833341	15.999993	32.5330119	5.0560423	247.103379
317	1	1	1	18.666679	20.833325	27.386428	2.97055862	163.039442
319	1	1	0	48.000001	0.999999	55.4571533	5.29331439	196.418576
318	1	1	0	30.166674	10.83333	48.4675881	5.75584276	187.43319
320	1	1	1	39.999946	8.333387	41.1917604	4.450622	102.304461
322	0	0	1	35.500004	4.166666	38.4975733	7.18456885	191.173947
323	0	1	0	28.333282	18.000052	42.4242424	4.0944464	170.902668
324	0	1	0	35.333378	13.666622	33.6826652	4.21829595	120.338534

	P49							
	1 MS	2 Running	3 Lesion	4 4. Arena Duration (s)	5 4. Duration in open arms (s)	6 4. Frequency of entry into open arms	7 4. Duration in closed arms (s)	8 4. Duration in central square (s)
137	0	1	1	49	0	0	47.419358	1.580642
250	1	0	0	49	1.833333	3	35.666672	11.499995
271	1	1	0	49	0	0	47.666667	1.333333
301	0	1	1	49	0	0	46.166667	2.833333
305	0	1	0	49	0	0	49	0
309	1	0	1	49	1.333333	1	45.000003	2.666664
306	1	1	1	49	6.166663	3	33.500005	9.333332
312	0	1	1	49	0.5	1	12.166603	36.333397
313	0	1	0	49	0	0	39.333337	9.666663
315	0	0	0	49	0	0	27.000009	21.999991
314	0	1	0	49	27.000067	5	2.99994	18.999993
317	1	1	1	49	0	0	43.166669	5.833331
319	1	1	0	49	0	0	48.666666	0.333334
318	1	1	0	49	0	0	48.333333	0.666667
320	1	1	1	49	0	0	40.833396	8.166604
322	0	0	1	49	0	0	46.166668	2.833332
323	0	1	0	49	0	0	44.333394	4.666606
324	0	1	0	49	0	0	45.833335	3.166665

	P49							
	1 MS	2 Running	3 Lesion	4 4. Maximum velocity (cm/s)	5 4. Mean velocity (cm/s)	6 5. Total distance (cm)	7 5. Arena Duration (s)	8 5. Duration in open arms (s)
137	0	1	1	41.6089218	5.38026154	229.083602	49	0.09879013
250	1	0	0	32.4602541	3.9056168	149.168433	49	0
271	1	1	0	27.8217418	3.59710717	116.318533	49	0
301	0	1	1	8.03548049	0.82554812	17.008659	49	0
305	0	1	0	22.2282994	1.29442011	100.050417	49	0
309	1	0	1	39.1185557	3.69063756	153.876459	49	0
306	1	1	1	34.6766179	4.51733683	96.5811109	49	0
312	0	1	1	31.4219453	2.06203408	19.4144619	49	0
313	0	1	0	32.5373998	4.87118726	230.470178	49	1.833333
315	0	0	0	38.9969334	4.11470122	157.927732	49	0
314	0	1	0	31.9975776	5.04292768	203.294626	49	3.333253
317	1	1	1	33.4043287	3.32733681	121.435547	49	0
319	1	1	0	58.8635169	4.00854433	159.956354	49	0
318	1	1	0	38.0692486	3.82516867	102.454015	49	0
320	1	1	1	33.8335852	2.08784731	41.6529194	49	0
322	0	0	1	40.5971348	3.90151097	85.0583196	49	0
323	0	1	0	33.1277493	3.48781077	108.272575	49	0
324	0	1	0	29.8855416	2.4558898	159.909055	49	0

	P49							
	1 MS	2 Running	3 Lesion	4 5. Frequency of entry into open arms	5 5. Duration in closed arms (s)	6 5. Duration in central square (s)	7 5. Maximum velocity (cm/s)	8 5. Mean velocity (cm/s)
137	0	1	1	2	34.411991	14.489218	34.802152	4.77258459
250	1	0	0	0	35.833338	13.166662	34.0095231	3.044255
271	1	1	0	0	48.333334	0.666666	32.4775381	2.37384861
301	0	1	1	0	49	0	2.75515602	0.34711562
305	0	1	0	0	49	0	21.7946003	2.04184584
309	1	0	1	0	37.333338	11.666662	33.5559265	3.14033699
306	1	1	1	0	49	0	19.2802273	1.97104395
312	0	1	1	0	0	49	3.10832891	0.39621374
313	0	1	0	1	39.666672	7.499995	29.327622	4.70347513
315	0	0	0	0	48	1	45.3052849	3.22301611
314	0	1	0	1	41.333416	4.333331	32.8366886	4.14887159
317	1	1	1	0	48.5	0.5	30.7283037	2.47827728
319	1	1	0	0	41.000003	7.999997	38.5824736	3.26441563
318	1	1	0	0	49	0	18.3318056	2.09089925
320	1	1	1	0	49	0	12.8316174	0.85006010
322	0	0	1	0	49	0	22.4056159	1.73588469
323	0	1	0	0	43.333335	5.666665	33.7438372	2.20964533
324	0	1	0	0	48.5	0.5	29.4034123	3.2634512

A5.1.5.1.2.1.2. EPM P49 1 minute Time-bins 1st interval Descriptive Statistics

	Descriptive Statistics (EPM P49 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	1. Total distance (cm) Mean	1. Total distance (cm) Std.Dev.	1. Total distance (cm) Std.Err	1. Total distance (cm) -95.00%	1. Total distance (cm) +95.00%
Total				62	422.605	71.1705	9.0386	404.531	440.679
MS	0			31	412.335	69.5629	12.4938	386.819	437.851
MS	1			31	432.876	72.4039	13.0041	406.318	459.434
Running	0			28	452.166	72.6986	13.7387	423.976	480.355
Running	1			34	398.262	60.7197	10.4133	377.075	419.448
Lesion	0			31	431.596	69.4437	12.4724	406.124	457.068
Lesion	1			31	413.615	72.8688	13.0876	386.886	440.343
MS*Running	0	0		14	430.085	74.0678	19.7954	387.319	472.850
MS*Running	0	1		17	397.717	64.1328	15.5544	364.743	430.691
MS*Running	1	0		14	474.247	66.6372	17.8095	435.771	512.722
MS*Running	1	1		17	398.806	59.0809	14.3292	368.429	429.183
MS*Lesion	0	0		16	424.767	60.3151	15.0787	392.627	456.906
MS*Lesion	0	1		15	399.074	78.1441	20.1767	355.799	442.349
MS*Lesion	1	0		15	438.881	79.5352	20.5359	394.835	482.926
MS*Lesion	1	1		16	427.247	67.1616	16.7904	391.459	463.035
Running*Lesion	0	0		14	465.359	66.9882	17.9033	426.681	504.037
Running*Lesion	0	1		14	438.972	78.1945	20.8983	393.824	484.120
Running*Lesion	1	0		17	403.791	59.8090	14.5058	373.040	434.542
Running*Lesion	1	1		17	392.732	62.9453	15.2664	360.369	425.096
MS*Running*Les	0	0	0	7	440.624	65.9547	24.9285	379.626	501.622
MS*Running*Les	0	0	1	7	419.546	85.3067	32.2429	340.650	498.441
MS*Running*Les	0	1	0	9	412.433	56.2798	18.7599	369.173	455.694
MS*Running*Les	0	1	1	8	381.162	72.0388	25.4695	320.936	441.387
MS*Running*Les	1	0	0	7	490.095	62.8098	23.7399	432.005	548.184
MS*Running*Les	1	0	1	7	458.399	71.3442	26.9655	392.416	524.381
MS*Running*Les	1	1	0	8	394.068	65.9720	23.3246	338.914	449.222
MS*Running*Les	1	1	1	9	403.017	55.9504	18.6501	360.010	446.025

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Duration in open arms (s) Mean	1. Duration in open arms (s) Std.Dev.	1. Duration in open arms (s) Std.Err	1. Duration in open arms (s) -95.00%	1. Duration in open arms (s) +95.00%
Total				62	14.6131	7.9745	1.01276	12.5880	16.6383
MS	0			31	14.8399	9.3563	1.68045	11.4079	18.2718
MS	1			31	14.3864	6.4542	1.15922	12.0189	16.7538
Running	0			28	14.5125	8.4396	1.59493	11.2399	17.7850
Running	1			34	14.6960	7.6979	1.32019	12.0101	17.3820
Lesion	0			31	14.3842	8.0540	1.44655	11.4300	17.3385
Lesion	1			31	14.8420	8.0205	1.44053	11.9001	17.7840
MS*Running	0	0		14	14.2614	10.5779	2.82706	8.1539	20.3689
MS*Running	0	1		17	15.3162	8.5261	2.06789	10.9325	19.7000
MS*Running	1	0		14	14.7635	5.9920	1.60145	11.3038	18.2232
MS*Running	1	1		17	14.0758	6.9791	1.69269	10.4875	17.6642
MS*Lesion	0	0		16	14.5179	8.7078	2.17696	9.8778	19.1580
MS*Lesion	0	1		15	15.1833	10.3006	2.65960	9.4790	20.8876
MS*Lesion	1	0		15	14.2417	7.5972	1.96159	10.0344	18.4489
MS*Lesion	1	1		16	14.5221	5.4226	1.35565	11.6326	17.4116
Running*Lesion	0	0		14	14.0678	7.4022	1.97833	9.7939	18.3417
Running*Lesion	0	1		14	14.9571	9.6287	2.57340	9.3976	20.5166
Running*Lesion	1	0		17	14.6448	8.7720	2.12752	10.1347	19.1550
Running*Lesion	1	1		17	14.7472	6.7280	1.63180	11.2880	18.2065
MS*Running*Les	0	0	0	7	12.4277	8.9139	3.36914	4.1837	20.6716
MS*Running*Les	0	0	1	7	16.0952	12.4550	4.70756	4.5762	27.6142
MS*Running*Les	0	1	0	9	16.1436	8.7054	2.90182	9.4520	22.8352
MS*Running*Les	0	1	1	8	14.3854	8.8135	3.11605	7.0171	21.7537
MS*Running*Les	1	0	0	7	15.7079	5.7431	2.17071	10.3963	21.0194
MS*Running*Les	1	0	1	7	13.8191	6.5367	2.47066	7.7736	19.8646
MS*Running*Les	1	1	0	8	12.9587	9.1177	3.22360	5.3361	20.5813
MS*Running*Les	1	1	1	9	15.0689	4.7242	1.57474	11.4375	18.7002

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Frequency of entry into open arms Mean	1. Frequency of entry into open arms Std.Dev.	1. Frequency of entry into oper arms Std.Err	1. Frequency of entry into open arms -95.00%	1. Frequency of entry into open arms +95.00%
Total				62	2.91935	1.52893	0.19417	2.53107	3.30763
MS	0			31	2.67741	1.30095	0.23365	2.20022	3.15461
MS	1			31	3.16129	1.71458	0.30794	2.53237	3.79020
Running	0			28	2.75000	1.37773	0.26036	2.21577	3.28422
Running	1			34	3.05882	1.65036	0.28303	2.48298	3.63466
Lesion	0			31	3.32258	1.59973	0.28732	2.73579	3.90936
Lesion	1			31	2.51612	1.36310	0.24482	2.01613	3.01612
MS*Running	0	0		14	2.57142	1.28388	0.34313	1.83013	3.31272
MS*Running	0	1		17	2.76470	1.34765	0.32685	2.07180	3.45760
MS*Running	1	0		14	2.92857	1.49173	0.39868	2.06726	3.78987
MS*Running	1	1		17	3.35294	1.90201	0.46130	2.37501	4.33086
MS*Lesion	0	0		16	3.00000	1.03279	0.25819	2.44966	3.55033
MS*Lesion	0	1		15	2.33333	1.49602	0.38627	1.50486	3.16180
MS*Lesion	1	0		15	3.66666	2.02366	0.52250	2.54599	4.78733
MS*Lesion	1	1		16	2.68750	1.25000	0.31250	2.02142	3.35357
Running*Lesion	0	0		14	3.00000	1.46759	0.39223	2.15263	3.84736
Running*Lesion	0	1		14	2.50000	1.28601	0.34370	1.75747	3.24252
Running*Lesion	1	0		17	3.58823	1.69774	0.41176	2.71533	4.46113
Running*Lesion	1	1		17	2.52941	1.46277	0.35477	1.77732	3.28150
MS*Running*Les	0	0	0	7	2.71428	1.11269	0.42056	1.68521	3.74335
MS*Running*Les	0	0	1	7	2.42857	1.51185	0.57142	1.03033	3.82680
MS*Running*Les	0	1	0	9	3.22222	0.97182	0.32394	2.47521	3.96923
MS*Running*Les	0	1	1	8	2.25000	1.58113	0.55901	0.92813	3.57186
MS*Running*Les	1	0	0	7	3.28571	1.79947	0.68013	1.62148	4.94994
MS*Running*Les	1	0	1	7	2.57142	1.13389	0.42857	1.52275	3.62010
MS*Running*Les	1	1	0	8	4.00000	2.26778	0.80178	2.10408	5.89591
MS*Running*Les	1	1	1	9	2.77777	1.39443	0.46481	1.70592	3.84963

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Duration in closed arms (s) Mean	1. Duration in closed arms (s) Std.Dev.	1. Duration in closed arms (s) Std.Err	1. Duration in closed arms (s) -95.00%	1. Duration in closed arms (s) +95.00%
Total				62	27.7463	7.7981	0.99036	25.7659	29.7266
MS	0			31	27.5687	8.7481	1.57121	24.3599	30.7776
MS	1			31	27.9238	6.8595	1.23201	25.4077	30.4399
Running	0			28	29.0612	7.9012	1.49320	25.9974	32.1250
Running	1			34	26.6634	7.6586	1.31343	23.9912	29.3356
Lesion	0			31	27.5980	7.5261	1.35173	24.8374	30.3586
Lesion	1			31	27.8945	8.1829	1.46970	24.8930	30.8960
MS*Running	0	0		14	28.7413	9.4901	2.53634	23.2619	34.2207
MS*Running	0	1		17	26.6031	8.2538	2.00184	22.3594	30.8468
MS*Running	1	0		14	29.3810	6.2753	1.67716	25.7577	33.0043
MS*Running	1	1		17	26.7237	7.2692	1.76304	22.9863	30.4612
MS*Lesion	0	0		16	27.3082	7.5006	1.87516	23.3114	31.3050
MS*Lesion	0	1		15	27.8467	10.1762	2.62748	22.2113	33.4821
MS*Lesion	1	0		15	27.9072	7.8038	2.01495	23.5856	32.2289
MS*Lesion	1	1		16	27.9393	6.1046	1.52615	24.6864	31.1923
Running*Lesion	0	0		14	29.2622	6.2761	1.67737	25.6384	32.8859
Running*Lesion	0	1		14	28.8601	9.4966	2.53808	23.3769	34.3433
Running*Lesion	1	0		17	26.2275	8.3535	2.02603	21.9325	30.5225
Running*Lesion	1	1		17	27.0993	7.1266	1.72845	23.4351	30.7635
MS*Running*Les	0	0	0	7	29.7380	7.3144	2.76459	22.9733	36.5028
MS*Running*Les	0	0	1	7	27.7446	11.8032	4.46120	16.8284	38.6608
MS*Running*Les	0	1	0	9	25.4183	7.4951	2.49837	19.6570	31.1795
MS*Running*Les	0	1	1	8	27.9360	9.3636	3.31053	20.1079	35.7642
MS*Running*Les	1	0	0	7	28.7863	5.5960	2.11511	23.6108	33.9618
MS*Running*Les	1	0	1	7	29.9757	7.2926	2.75635	23.2311	36.7202
MS*Running*Les	1	1	0	8	27.1380	9.6700	3.41887	19.0536	35.2223
MS*Running*Les	1	1	1	9	26.3555	4.8515	1.61718	22.6263	30.0848

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Duration in central square (s) Mean	1. Duration in central square (s) Std.Dev.	1. Duration in central square (s) Std.Err	1. Duration in central square (s) -95.00%	1. Duration in central square (s) +95.00%
Total				62	6.64051	2.79052	0.35439	5.93185	7.3491
MS	0			31	6.59131	2.58213	0.46376	5.64417	7.5384
MS	1			31	6.68972	3.02674	0.54362	5.57950	7.7999
Running	0			28	5.42630	1.94647	0.36785	4.67153	6.1810
Running	1			34	7.64046	3.00219	0.51487	6.59294	8.6879
Lesion	0			31	7.01765	3.06659	0.55077	5.89281	8.1424
Lesion	1			31	6.26338	2.47703	0.44488	5.35480	7.1719
MS*Running	0	0		14	5.99717	1.90859	0.51009	4.89518	7.0991
MS*Running	0	1		17	7.08060	2.99640	0.72673	5.53999	8.6212
MS*Running	1	0		14	4.85542	1.87732	0.50173	3.77149	5.9393
MS*Running	1	1		17	8.20032	2.99084	0.72538	6.66257	9.7380
MS*Lesion	0	0		16	7.17385	2.85305	0.71326	5.65357	8.6941
MS*Lesion	0	1		15	5.96993	2.18277	0.56358	4.76115	7.1787
MS*Lesion	1	0		15	6.85104	3.37231	0.87072	4.98351	8.7185
MS*Lesion	1	1		16	6.53849	2.76725	0.69181	5.06392	8.0130
Running*Lesion	0	0		14	5.66994	1.93050	0.51594	4.55530	6.7845
Running*Lesion	0	1		14	5.18265	2.00357	0.53547	4.02582	6.3394
Running*Lesion	1	0		17	8.12753	3.42145	0.82982	6.36838	9.8866
Running*Lesion	1	1		17	7.15339	2.52570	0.61257	5.85479	8.4519
MS*Running*Lesi	0	0	0	7	6.83421	1.77951	0.67259	5.18843	8.4799
MS*Running*Lesi	0	0	1	7	5.16013	1.75815	0.66452	3.53411	6.7861
MS*Running*Lesi	0	1	0	9	7.43802	3.56481	1.18827	4.69786	10.1781
MS*Running*Lesi	0	1	1	8	6.67850	2.37694	0.84037	4.69133	8.6656
MS*Running*Lesi	1	0	0	7	4.50567	1.32108	0.49932	3.28387	5.7274
MS*Running*Lesi	1	0	1	7	5.20517	2.36757	0.89485	3.01554	7.3948
MS*Running*Lesi	1	1	0	8	8.90324	3.30682	1.16914	6.13866	11.6678
MS*Running*Lesi	1	1	1	9	7.57551	2.71823	0.90607	5.48609	9.6649

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Maximum velocity (cm/s) Mean	1. Maximum velocity (cm/s) Std.Dev.	1. Maximum velocity (cm/s) Std.Err	1. Maximum velocity (cm/s) -95.00%	1. Maximum velocity (cm/s) +95.00%
Total				62	49.5303	8.8577	1.12493	47.2808	51.7797
MS	0			31	48.8329	7.5568	1.35724	46.0610	51.6047
MS	1			31	50.2277	10.0709	1.80879	46.5336	53.9217
Running	0			28	51.1783	8.3546	1.57888	47.9387	54.4179
Running	1			34	48.1731	9.1498	1.56918	44.9805	51.3656
Lesion	0			31	50.6979	10.1610	1.82498	46.9707	54.4250
Lesion	1			31	48.3627	7.3123	1.31332	45.6805	51.0449
MS*Running	0	0		14	49.7580	6.1166	1.63474	46.2264	53.2896
MS*Running	0	1		17	48.0710	8.6780	2.10473	43.6092	52.5328
MS*Running	1	0		14	52.5986	10.1593	2.71519	46.7328	58.4644
MS*Running	1	1		17	48.2752	9.8661	2.39289	43.2024	53.3479
MS*Lesion	0	0		16	48.3344	7.0891	1.77227	44.5568	52.1119
MS*Lesion	0	1		15	49.3646	8.2423	2.12817	44.8002	53.9291
MS*Lesion	1	0		15	53.2189	12.4179	3.20630	46.3421	60.0958
MS*Lesion	1	1		16	47.4234	6.4487	1.61219	43.9871	50.8597
Running*Lesion	0	0		14	53.3336	10.2725	2.74546	47.4024	59.2648
Running*Lesion	0	1		14	49.0230	5.4257	1.45008	45.8903	52.1557
Running*Lesion	1	0		17	48.5272	9.8368	2.38579	43.4696	53.5849
Running*Lesion	1	1		17	47.8189	8.6972	2.10938	43.3472	52.2906
MS*Running*Les	0	0	0	7	48.5251	6.9046	2.60969	42.1395	54.9108
MS*Running*Les	0	0	1	7	50.9909	5.4627	2.06474	45.9386	56.0431
MS*Running*Les	0	1	0	9	48.1860	7.6431	2.54770	42.3110	54.0610
MS*Running*Les	0	1	1	8	47.9417	10.2633	3.62863	39.3613	56.5220
MS*Running*Les	1	0	0	7	58.1421	11.2701	4.25971	47.7190	68.5652
MS*Running*Les	1	0	1	7	47.0551	4.9905	1.88625	42.4396	51.6706
MS*Running*Les	1	1	0	8	48.9111	12.4135	4.38884	38.5332	59.2891
MS*Running*Les	1	1	1	9	47.7098	7.6867	2.56223	41.8013	53.6184

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Mean velocity (cm/s) Mean	1. Mean velocity (cm/s) Std.Dev.	1. Mean velocity (cm/s) Std.Err	1. Mean velocity (cm/s) -95.00%	1. Mean velocity (cm/s) +95.00%
Total				62	8.6600	1.46215	0.18569	8.28875	9.0313
MS	0			31	8.4507	1.43719	0.25812	7.92356	8.9779
MS	1			31	8.8694	1.48018	0.26585	8.32646	9.4123
Running	0			28	9.2696	1.49339	0.28222	8.69061	9.8487
Running	1			34	8.1580	1.24584	0.21366	7.72333	8.5927
Lesion	0			31	8.8462	1.43981	0.25859	8.31811	9.3743
Lesion	1			31	8.4739	1.48403	0.26654	7.92955	9.0182
MS*Running	0	0		14	8.8189	1.53669	0.41070	7.93173	9.7062
MS*Running	0	1		17	8.1474	1.31826	0.31972	7.46967	8.8252
MS*Running	1	0		14	9.7203	1.35390	0.36184	8.93866	10.5021
MS*Running	1	1		17	8.1686	1.20964	0.29338	7.54666	8.7905
MS*Lesion	0	0		16	8.7066	1.26986	0.31746	8.02995	9.3832
MS*Lesion	0	1		15	8.1778	1.59491	0.41180	7.29456	9.0610
MS*Lesion	1	0		15	8.9951	1.63356	0.42178	8.09054	9.8998
MS*Lesion	1	1		16	8.7514	1.36405	0.34101	8.02463	9.4783
Running*Lesion	0	0		14	9.5564	1.39441	0.37267	8.75137	10.3616
Running*Lesion	0	1		14	8.9828	1.58443	0.42345	8.06806	9.8977
Running*Lesion	1	0		17	8.2613	1.22569	0.29727	7.63114	8.8915
Running*Lesion	1	1		17	8.0547	1.29471	0.31401	7.38904	8.7204
MS*Running*Les	0	0	0	7	9.0532	1.41621	0.53528	7.74348	10.3630
MS*Running*Les	0	0	1	7	8.5847	1.72705	0.65276	6.98746	10.1819
MS*Running*Les	0	1	0	9	8.4369	1.15427	0.38475	7.54974	9.3242
MS*Running*Les	0	1	1	8	7.8217	1.49011	0.52683	6.57597	9.0675
MS*Running*Les	1	0	0	7	10.0597	1.27133	0.48052	8.88391	11.2355
MS*Running*Les	1	0	1	7	9.3810	1.44452	0.54597	8.04510	10.7170
MS*Running*Les	1	1	0	8	8.0637	1.35162	0.47787	6.93373	9.1937
MS*Running*Les	1	1	1	9	8.2618	1.14330	0.38110	7.38299	9.1406

A5.1.5.1.2.1.3. EPM P49 1 minute intervals 1st minute Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 1. Total distance (cm) (EPM P49 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1107224	1	1107224	2479.37	0.00000
MS	8077	1	8077	1.809	0.18428
Running	45529	1	45529	10.195	0.00235
Lesion	5404	1	5404	1.210	0.27620
MS*Running	6896	1	6896	1.544	0.21937
MS*Lesion	840	1	840	0.188	0.66629
Running*Lesion	889	1	889	0.199	0.65734
MS*Running*Lesion	2476	1	2476	0.555	0.45969
Error	241150	54	4466		

A5.1.5.1.2.1.4. EPM P49 1 minute intervals 1st minute Distance Travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 1. Total distance (cm) (EPM P49 1 min tim
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 4465.7, df = 54.000

Cell No.	Running	{1} 452.17	{2} 398.26
1	0		0.00272
2	1	0.00272	

A5.1.5.1.2.1.5. EPM P49 1 minute intervals 1st minute Open Arm duration ANOVA

Univariate Tests of Significance for 1. Duration in open arms (s) (EPM P49
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	13028.4	1	13028.4	186.500	0.00000
MS	2.15	1	2.15	0.030	0.86145
Running	0.25	1	0.25	0.003	0.95289
Lesion	4.35	1	4.35	0.062	0.80389
MS*Running	11.77	1	11.77	0.168	0.68302
MS*Lesion	2.73	1	2.73	0.039	0.84403
Running*Lesion	1.95	1	1.95	0.027	0.86791
MS*Running*Lesion	85.11	1	85.11	1.218	0.27457
Error	3772.3	54	69.86		

A5.1.5.1.2.1.6. EPM P49 1 minute intervals 1st minute Open Arm Frequency ANOVA

Univariate Tests of Significance for 1. Frequency of entry into open arms (
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	517.953	1	517.953	223.940	0.00000
MS	3.909	1	3.909	1.690	0.19910
Running	1.497	1	1.497	0.647	0.42460
Lesion	9.777	1	9.777	4.227	0.04462
MS*Running	0.335	1	0.335	0.144	0.70501
MS*Lesion	0.441	1	0.441	0.190	0.66403
Running*Lesion	1.367	1	1.367	0.591	0.44536
MS*Running*Lesion	0.030	1	0.030	0.013	0.90892
Error	124.896	54	2.312		

A5.1.5.1.2.1.7. EPM P49 1 minute intervals 1st minute Open Arm Frequency post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable 1. Frequency of entry into open arms (EPM P49 1 min tim
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 2.3129, df = 54.000

Cell No.	Lesion	{1} 3.3226	{2} 2.5161
1	0		0.04164
2	1	0.04164	

A5.1.5.1.2.1.8. EPM P49 1 minute intervals 1st minute Closed Arm Duration ANOVA

	Univariate Tests of Significance for 1. Duration in closed arms (s) (EPM P4 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	47688.7	1	47688.7	721.358	0.00000
MS	1.93	1	1.93	0.029	0.86503
Running	84.61	1	84.61	1.279	0.26293
Lesion	0.83	1	0.83	0.012	0.91115
MS*Running	1.25	1	1.25	0.018	0.89133
MS*Lesion	0.01	1	0.01	0.000	0.98877
Running*Lesion	6.18	1	6.18	0.093	0.76098
MS*Running*Lesion	40.27	1	40.27	0.609	0.43851
Error	3569.9	54	66.11		

A5.1.5.1.2.1.9. EPM P49 1 minute intervals 1st minute Central Square Duration ANOVA

	Univariate Tests of Significance for 1. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2620.93	1	2620.93	394.764	0.00000
MS	0.006	1	0.006	0.000	0.97625
Running	75.728	1	75.728	11.406	0.00136
Lesion	8.983	1	8.983	1.353	0.24987
MS*Running	20.680	1	20.680	3.114	0.08323
MS*Lesion	3.123	1	3.123	0.470	0.49574
Running*Lesion	1.186	1	1.186	0.178	0.67419
MS*Running*Lesion	8.292	1	8.292	1.249	0.26869
Error	358.51	54	6.639		

A5.1.5.1.2.1.10. EPM P49 1 minute intervals 1st minute Central Square Duration post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 1. Duration in central square (s) (EPM P49 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 6.6392, df = 54.000		
Cell No.	Running	{1} 5.4263	{2} 7.6405
1	0		0.00152
2	1	0.00152	

A5.1.5.1.2.1.11. EPM P49 1 minute intervals 1st minute Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Maximum velocity (cm/s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	151368.4	1	151368.4	1977.88	0.00000
MS	36.5	1	36.5	0.477	0.49259
Running	137.2	1	137.2	1.792	0.18625
Lesion	97.1	1	97.1	1.269	0.26497
MS*Running	25.8	1	25.8	0.337	0.56399
MS*Lesion	201.7	1	201.7	2.636	0.11029
Running*Lesion	49.3	1	49.3	0.645	0.42554
MS*Running*Lesion	152.0	1	152.0	1.986	0.16445
Error	4132.7	54	76.5		

A5.1.5.1.2.1.12. EPM P49 1 minute intervals 1st minute Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Mean velocity (cm/s) (EPM P49 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	4649.964	1	4649.964	2471.553	0.00000
MS	3.349	1	3.349	1.780	0.18772
Running	19.355	1	19.355	10.288	0.00225
Lesion	2.345	1	2.345	1.246	0.26919
MS*Running	2.888	1	2.888	1.535	0.22075
MS*Lesion	0.349	1	0.349	0.185	0.66854
Running*Lesion	0.511	1	0.511	0.271	0.60451
MS*Running*Lesion	1.004	1	1.004	0.533	0.46830
Error	101.595	54	1.881		

A5.1.5.1.2.1.13. EPM P49 1 minute intervals 1st minute Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 1. Mean velocity (cm/s) (EPM P49 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.8814, df = 54.000 Running	{1} 9.2697	{2} 8.1580
1	0		0.002617
2	1	0.002617	

A5.1.5.1.2.2.1. EPM P49 1 minute Time-bins 2nd interval Descriptive Statistics

	Descriptive Statistics (EPM P49 1 min timebins)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	2. Total distance (cm) Mean	2. Total distance (cm) Std.Dev.	2. Total distance (cm) Std.Err	2. Total distance (cm) -95.00%	2. Total distance (cm) +95.00%
Total				62	365.532	93.111	11.8252	341.886	389.178
MS	0			31	353.106	84.334	15.1468	322.172	384.040
MS	1			31	377.957	100.981	18.1367	340.917	414.998
Running	0			28	399.666	96.999	18.3311	362.054	437.279
Running	1			34	337.421	80.777	13.8532	309.236	365.606
Lesion	0			31	363.972	84.527	15.1814	332.968	394.977
Lesion	1			31	367.091	102.365	18.3854	329.543	404.639
MS*Running	0	0		14	391.635	86.197	23.0373	341.866	441.404
MS*Running	0	1		17	321.377	70.214	17.0294	285.276	357.478
MS*Running	1	0		14	407.698	109.418	29.2433	344.522	470.875
MS*Running	1	1		17	353.465	89.335	21.6670	307.533	399.397
MS*Lesion	0	0		16	355.032	82.817	20.7042	310.902	399.162
MS*Lesion	0	1		15	351.052	88.787	22.9249	301.883	400.221
MS*Lesion	1	0		15	373.509	88.164	22.7639	324.685	422.333
MS*Lesion	1	1		16	382.128	114.461	28.6152	321.136	443.120
Running*Lesion	0	0		14	403.314	83.161	22.2257	355.298	451.330
Running*Lesion	0	1		14	396.019	112.236	29.9964	331.216	460.822
Running*Lesion	1	0		17	331.574	72.855	17.6699	294.115	369.032
Running*Lesion	1	1		17	343.268	89.874	21.7977	297.059	389.477
MS*Running*Les	0	0	0	7	385.586	77.502	29.2933	313.908	457.264
MS*Running*Les	0	0	1	7	397.684	100.032	37.8085	305.169	490.198
MS*Running*Les	0	1	0	9	331.268	83.083	27.6943	267.405	395.131
MS*Running*Les	0	1	1	8	310.249	55.788	19.7243	263.609	356.890
MS*Running*Les	1	0	0	7	421.042	90.797	34.3183	337.068	505.016
MS*Running*Les	1	0	1	7	394.354	131.455	49.6856	272.778	515.931
MS*Running*Les	1	1	0	8	331.917	65.138	23.0300	277.460	386.375
MS*Running*Les	1	1	1	9	372.619	106.639	35.5466	290.648	454.589

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Duration in open arms (s) Mean	2. Duration in open arms (s) Std.Dev.	2. Duration in open arms (s) Std.Err	2. Duration in open arms (s) -95.00%	2. Duration in open arms (s) +95.00%
Total				62	8.3546	5.85077	0.74304	6.86881	9.8404
MS	0			31	8.4826	6.04273	1.08530	6.26618	10.6991
MS	1			31	8.2265	5.74940	1.03262	6.11768	10.3354
Running	0			28	9.0482	5.46665	1.03310	6.92851	11.1680
Running	1			34	7.7834	6.17100	1.05831	5.63023	9.9365
Lesion	0			31	8.1353	5.12463	0.92041	6.25565	10.0151
Lesion	1			31	8.5738	6.57594	1.18107	6.16180	10.9859
MS*Running	0	0		14	8.5403	5.25919	1.40557	5.50374	11.5768
MS*Running	0	1		17	8.4352	6.78134	1.64471	4.94855	11.9218
MS*Running	1	0		14	9.5562	5.81830	1.55500	6.19681	12.9156
MS*Running	1	1		17	7.1316	5.62612	1.36453	4.23891	10.0242
MS*Lesion	0	0		16	7.6473	4.96402	1.24100	5.00215	10.2924
MS*Lesion	0	1		15	9.3737	7.08489	1.82931	5.45025	13.2972
MS*Lesion	1	0		15	8.6560	5.41396	1.39788	5.65785	11.6541
MS*Lesion	1	1		16	7.8240	6.19654	1.54913	4.52210	11.1259
Running*Lesion	0	0		14	8.8091	4.68538	1.25222	6.10387	11.5143
Running*Lesion	0	1		14	9.2873	6.32388	1.69012	5.63608	12.9386
Running*Lesion	1	0		17	7.5805	5.53895	1.34339	4.73266	10.4284
Running*Lesion	1	1		17	7.9862	6.91196	1.67639	4.43247	11.5400
MS*Running*Les	0	0	0	7	8.5243	4.30151	1.62581	4.54614	12.5026
MS*Running*Les	0	0	1	7	8.5562	6.43618	2.43264	2.60377	14.5087
MS*Running*Les	0	1	0	9	6.9651	5.57934	1.85978	2.67645	11.2537
MS*Running*Les	0	1	1	8	10.0890	7.97695	2.82027	3.42015	16.7579
MS*Running*Les	1	0	0	7	9.0938	5.37329	2.03091	4.12442	14.0633
MS*Running*Les	1	0	1	7	10.0185	6.63148	2.50646	3.88542	16.1516
MS*Running*Les	1	1	0	8	8.2728	5.78921	2.04679	3.43296	13.1127
MS*Running*Les	1	1	1	9	6.1171	5.61433	1.87144	1.80159	10.4327

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Frequency of entry into open arms Mean	2. Frequency of entry into open arms Std.Dev.	2. Frequency of entry into open arms Std.Err	2. Frequency of entry into open arms -95.00%	2. Frequency of entry into open arms +95.00%
Total				62	2.11290	1.56922	0.19929	1.71439	2.51141
MS	0			31	2.25806	1.75057	0.31441	1.61594	2.90018
MS	1			31	1.96774	1.37801	0.24749	1.46228	2.47320
Running	0			28	2.25000	1.55456	0.29378	1.64720	2.85279
Running	1			34	2.00000	1.59544	0.27361	1.44332	2.55667
Lesion	0			31	1.96774	1.30342	0.23410	1.48964	2.44584
Lesion	1			31	2.25806	1.80679	0.32451	1.59532	2.92080
MS*Running	0	0		14	2.21428	1.52812	0.40840	1.33197	3.09659
MS*Running	0	1		17	2.29411	1.96101	0.47561	1.28585	3.30238
MS*Running	1	0		14	2.28571	1.63747	0.43763	1.34026	3.23116
MS*Running	1	1		17	1.70588	1.10480	0.26795	1.13784	2.27391
MS*Lesion	0	0		16	2.00000	1.31656	0.32914	1.29845	2.70154
MS*Lesion	0	1		15	2.53333	2.13363	0.55090	1.35176	3.71489
MS*Lesion	1	0		15	1.93333	1.33452	0.34457	1.19429	2.67236
MS*Lesion	1	1		16	2.00000	1.46059	0.36514	1.22170	2.77829
Running*Lesion	0	0		14	1.92857	1.32805	0.35493	1.16177	2.69536
Running*Lesion	0	1		14	2.57142	1.74154	0.46544	1.56589	3.57696
Running*Lesion	1	0		17	2.00000	1.32287	0.32084	1.31984	2.68016
Running*Lesion	1	1		17	2.00000	1.87082	0.45374	1.03810	2.96189
MS*Running*Les	0	0	0	7	1.85714	1.34518	0.50843	0.61305	3.10123
MS*Running*Les	0	0	1	7	2.57142	1.71824	0.64943	0.98231	4.16054
MS*Running*Les	0	1	0	9	2.11111	1.36422	0.45474	1.06247	3.15974
MS*Running*Les	0	1	1	8	2.50000	2.56348	0.90632	0.35687	4.64312
MS*Running*Les	1	0	0	7	2.00000	1.41421	0.53452	0.69207	3.30792
MS*Running*Les	1	0	1	7	2.57142	1.90237	0.71903	0.81202	4.33083
MS*Running*Les	1	1	0	8	1.87500	1.35620	0.47949	0.74118	3.00881
MS*Running*Les	1	1	1	9	1.55555	0.88191	0.29397	0.87765	2.23345

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Duration in closed arms (s) Mean	2. Duration in closed arms (s) Std.Dev.	2. Duration in closed arms (s) Std.Err	2. Duration in closed arms (s) -95.00%	2. Duration in closed arms (s) +95.00%
Total				62	31.8406	8.1688	1.03744	29.7661	33.9151
MS	0			31	31.2111	8.5336	1.53269	28.0810	34.3413
MS	1			31	32.4701	7.8766	1.41468	29.5809	35.3593
Running	0			28	31.9767	7.9564	1.50362	28.8915	35.0619
Running	1			34	31.7285	8.4572	1.45041	28.7776	34.6794
Lesion	0			31	31.7792	7.1905	1.29146	29.1417	34.4167
Lesion	1			31	31.9020	9.1636	1.64584	28.5408	35.2633
MS*Running	0	0		14	31.8753	7.4939	2.00284	27.5484	36.2021
MS*Running	0	1		17	30.6642	9.4979	2.30359	25.7808	35.5476
MS*Running	1	0		14	32.0782	8.6774	2.31914	27.0680	37.0884
MS*Running	1	1		17	32.7928	7.4096	1.79710	28.9831	36.6025
MS*Lesion	0	0		16	31.7433	7.1658	1.79146	27.9249	35.5617
MS*Lesion	0	1		15	30.6435	10.0182	2.58669	25.0956	36.1914
MS*Lesion	1	0		15	31.8175	7.4681	1.92827	27.6817	35.9532
MS*Lesion	1	1		16	33.0819	8.4381	2.10953	28.5855	37.5783
Running*Lesion	0	0		14	32.7415	6.8348	1.82668	28.7952	36.6878
Running*Lesion	0	1		14	31.2120	9.1381	2.44226	25.9358	36.4881
Running*Lesion	1	0		17	30.9867	7.5836	1.83930	27.0876	34.8859
Running*Lesion	1	1		17	32.4703	9.4255	2.28603	27.6242	37.3165
MS*Running*Les	0	0	0	7	32.7521	7.6614	2.89574	25.6664	39.8377
MS*Running*Les	0	0	1	7	30.9984	7.8222	2.95652	23.7641	38.2328
MS*Running*Les	0	1	0	9	30.9587	7.1185	2.37286	25.4868	36.4305
MS*Running*Les	0	1	1	8	30.3329	12.1674	4.30185	20.1607	40.5052
MS*Running*Les	1	0	0	7	32.7309	6.5205	2.46453	26.7004	38.7614
MS*Running*Les	1	0	1	7	31.4255	10.9377	4.13406	21.3098	41.5412
MS*Running*Les	1	1	0	8	31.0183	8.5755	3.03190	23.8490	38.1876
MS*Running*Les	1	1	1	9	34.3702	6.2857	2.09525	29.5385	39.2019

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Duration in central square (s) Mean	2. Duration in central square (s) Std.Dev.	2. Duration in central square (s) Std.Err	2. Duration in central square (s) -95.00%	2. Duration in central square (s) +95.00%
Total				62	8.8047	4.6264	0.5875	7.6298	9.9796
MS	0			31	9.3061	4.8853	0.8774	7.5141	11.0981
MS	1			31	8.3032	4.3744	0.7856	6.6987	9.9078
Running	0			28	7.9749	4.0732	0.7697	6.3955	9.5544
Running	1			34	9.4880	4.9925	0.8562	7.7460	11.2300
Lesion	0			31	9.0853	4.6661	0.8380	7.3738	10.7969
Lesion	1			31	8.5240	4.6461	0.8344	6.8198	10.2282
MS*Running	0	0		14	8.5843	4.6302	1.2374	5.9109	11.2578
MS*Running	0	1		17	9.9005	5.1477	1.2485	7.2538	12.5472
MS*Running	1	0		14	7.3655	3.4956	0.9342	5.3472	9.3839
MS*Running	1	1		17	9.0755	4.9546	1.2016	6.5280	11.6229
MS*Lesion	0	0		16	9.6093	4.9083	1.2270	6.9938	12.2248
MS*Lesion	0	1		15	8.9827	5.0112	1.2938	6.2075	11.7578
MS*Lesion	1	0		15	8.5264	4.4939	1.1603	6.0378	11.0151
MS*Lesion	1	1		16	8.0940	4.3962	1.0990	5.7514	10.4366
Running*Lesion	0	0		14	7.4493	3.5605	0.9515	5.3935	9.5051
Running*Lesion	0	1		14	8.5006	4.6028	1.2301	5.8429	11.1582
Running*Lesion	1	0		17	10.4327	5.1237	1.2427	7.7982	13.0671
Running*Lesion	1	1		17	8.5433	4.8228	1.1697	6.0636	11.0230
MS*Running*Les	0	0	0	7	7.7235	4.7892	1.8101	3.2941	12.1528
MS*Running*Les	0	0	1	7	9.4452	4.6674	1.7641	5.1285	13.7619
MS*Running*Les	0	1	0	9	11.0761	4.7367	1.5789	7.4351	14.7171
MS*Running*Les	0	1	1	8	8.5779	5.5812	1.9732	3.9118	13.2440
MS*Running*Les	1	0	0	7	7.1752	2.0869	0.7887	5.2451	9.1052
MS*Running*Les	1	0	1	7	7.5559	4.6942	1.7742	3.2144	11.8974
MS*Running*Les	1	1	0	8	9.7088	5.7648	2.0381	4.8892	14.5283
MS*Running*Les	1	1	1	9	8.5125	4.3886	1.4628	5.1391	11.8860

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Maximum velocity (cm/s) Mean	2. Maximum velocity (cm/s) Std.Dev.	2. Maximum velocity (cm/s) Std.Err	2. Maximum velocity (cm/s) -95.00%	2. Maximum velocity (cm/s) +95.00%
Total				62	47.3933	15.6373	1.9859	43.4221	51.3644
MS	0			31	44.7283	8.8937	1.5973	41.4660	47.9906
MS	1			31	50.0582	20.0854	3.6074	42.6908	57.4256
Running	0			28	49.4681	8.4542	1.5977	46.1899	52.7464
Running	1			34	45.6845	19.6688	3.3731	38.8217	52.5473
Lesion	0			31	46.6360	8.1756	1.4684	43.6372	49.6349
Lesion	1			31	48.1505	20.7165	3.7208	40.5516	55.7493
MS*Running	0	0		14	48.9193	9.9274	2.6532	43.1874	54.6513
MS*Running	0	1		17	41.2769	6.3411	1.5379	38.0166	44.5372
MS*Running	1	0		14	50.0170	7.0173	1.8754	45.9653	54.0687
MS*Running	1	1		17	50.0922	26.7658	6.4916	36.3304	63.8539
MS*Lesion	0	0		16	44.5626	7.7402	1.9350	40.4382	48.6871
MS*Lesion	0	1		15	44.9050	10.2588	2.6488	39.2238	50.5861
MS*Lesion	1	0		15	48.8477	8.2998	2.1430	44.2514	53.4440
MS*Lesion	1	1		16	51.1931	27.1977	6.7994	36.7004	65.6857
Running*Lesion	0	0		14	49.6014	7.5163	2.0088	45.2616	53.9412
Running*Lesion	0	1		14	49.3349	9.5871	2.5622	43.7995	54.8704
Running*Lesion	1	0		17	44.1940	8.0867	1.9613	40.0362	48.3518
Running*Lesion	1	1		17	47.1750	26.9775	6.5430	33.3045	61.0456
MS*Running*Les	0	0	0	7	47.9823	6.3690	2.4072	42.0919	53.8726
MS*Running*Les	0	0	1	7	49.8564	13.0737	4.9414	37.7652	61.9476
MS*Running*Les	0	1	0	9	41.9030	7.9824	2.6608	35.7671	48.0388
MS*Running*Les	0	1	1	8	40.5725	4.2443	1.5005	37.0242	44.1208
MS*Running*Les	1	0	0	7	51.2205	8.7019	3.2890	43.1726	59.2685
MS*Running*Les	1	0	1	7	48.8134	5.2525	1.9852	43.9556	53.6712
MS*Running*Les	1	1	0	8	46.7714	7.8938	2.7908	40.1720	53.3708
MS*Running*Les	1	1	1	9	53.0439	36.8438	12.2812	24.7232	81.3646

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Mean velocity (cm/s) Mean	2. Mean velocity (cm/s) Std.Dev.	2. Mean velocity (cm/s) Std.Err	2. Mean velocity (cm/s) -95.00%	2. Mean velocity (cm/s) +95.00%
Total				62	7.49091	1.91262	0.24290	7.00519	7.9766
MS	0			31	7.23687	1.73468	0.31155	6.60058	7.8731
MS	1			31	7.74495	2.07261	0.37225	6.98471	8.5051
Running	0			28	8.19157	1.98063	0.37430	7.42357	8.9595
Running	1			34	6.91389	1.67115	0.28660	6.33079	7.4969
Lesion	0			31	7.45741	1.73011	0.31073	6.82280	8.0920
Lesion	1			31	7.52440	2.10774	0.37856	6.75128	8.2975
MS*Running	0	0		14	8.03077	1.78086	0.47595	7.00254	9.0590
MS*Running	0	1		17	6.58306	1.43513	0.34807	5.84519	7.3209
MS*Running	1	0		14	8.35237	2.21820	0.59283	7.07162	9.6331
MS*Running	1	1		17	7.24471	1.86222	0.45165	6.28724	8.2021
MS*Lesion	0	0		16	7.27699	1.71549	0.42887	6.36287	8.1911
MS*Lesion	0	1		15	7.19407	1.81416	0.46841	6.18942	8.1987
MS*Lesion	1	0		15	7.64986	1.78443	0.46073	6.66167	8.6380
MS*Lesion	1	1		16	7.83409	2.36685	0.59171	6.57288	9.0953
Running*Lesion	0	0		14	8.27700	1.69714	0.45358	7.29710	9.2569
Running*Lesion	0	1		14	8.10614	2.29162	0.61246	6.78300	9.4292
Running*Lesion	1	0		17	6.78245	1.48336	0.35976	6.01977	7.5451
Running*Lesion	1	1		17	7.04532	1.87696	0.45523	6.08028	8.0103
MS*Running*Les	0	0	0	7	7.92093	1.63174	0.61674	6.41181	9.4300
MS*Running*Les	0	0	1	7	8.14062	2.04468	0.77281	6.24960	10.0316
MS*Running*Les	0	1	0	9	6.77615	1.69587	0.56529	5.47258	8.0797
MS*Running*Les	0	1	1	8	6.36584	1.14845	0.40604	5.40571	7.3259
MS*Running*Les	1	0	0	7	8.63308	1.81169	0.68475	6.95755	10.3086
MS*Running*Les	1	0	1	7	8.07167	2.68231	1.01382	5.59094	10.5524
MS*Running*Les	1	1	0	8	6.78953	1.32002	0.46669	5.68597	7.8931
MS*Running*Les	1	1	1	9	7.64931	2.24048	0.74683	5.92712	9.3715

A5.1.5.1.2.2.2. EPM P49 1 minute intervals 2nd minute Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 2. Total distance (cm) (EPM P49 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	830871	1	830871	1003.92	0.00000
MS	867	1	867	1.048	0.31051
Running	6114	1	6114	7.388	0.00880
Lesion	25	1	25	0.003	0.95650
MS*Running	914	1	914	0.110	0.74087
MS*Lesion	504	1	504	0.061	0.80601
Running*Lesion	1125	1	1125	0.136	0.71374
MS*Running*Lesion	967	1	967	1.169	0.28431
Error	44691	54	827		

A5.1.5.1.2.2.3. EPM P49 1 minute intervals 2nd interval Distance Travelled post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 2. Total distance (cm) (EPM P49 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 8276.2, df = 54.000		
Cell No.	Running	{1} 399.67	{2} 337.42
1	0		0.009832
2	1	0.009832	

A5.1.5.1.2.2.4. EPM P49 1 minute intervals 2nd interval Open Arm Duration ANOVA

	Univariate Tests of Significance for 2. Duration in open arms (s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4383.45	1	4383.45	119.676	0.00000
MS	0.383	1	0.383	0.0105	0.91891
Running	21.608	1	21.608	0.589	0.44578
Lesion	3.550	1	3.550	0.096	0.75676
MS*Running	21.130	1	21.130	0.576	0.45084
MS*Lesion	18.440	1	18.440	0.503	0.48104
Running*Lesion	0.000	1	0.000	0.000	1.00000
MS*Running*Lesion	36.505	1	36.505	0.996	0.32257
Error	1977.88	54	36.627		

A5.1.5.1.2.2.5. EPM P49 1 minute intervals 2nd interval Open Arm Frequency ANOVA

	Univariate Tests of Significance for 2. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	278.271	1	278.271	105.619	0.00000
MS	1.031	1	1.031	0.391	0.53408
Running	0.880	1	0.880	0.334	0.56571
Lesion	1.759	1	1.759	0.667	0.41738
MS*Running	1.678	1	1.678	0.637	0.42831
MS*Lesion	0.694	1	0.694	0.263	0.60982
Running*Lesion	1.417	1	1.417	0.538	0.46643
MS*Running*Lesion	0.306	1	0.306	0.116	0.73441
Error	142.271	54	2.634		

A5.1.5.1.2.2.6. EPM P49 1 minute intervals 2nd interval Closed Arm Duration ANOVA

	Univariate Tests of Significance for 2. Duration in closed arms (s) (EPM P4 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	62103.8	1	62103.8	845.843	0.00000
MS	19.43	1	19.43	0.264	0.60908
Running	1.44	1	1.44	0.019	0.88907
Lesion	0.11	1	0.11	0.001	0.96981
MS*Running	13.05	1	13.05	0.177	0.67495
MS*Lesion	18.77	1	18.77	0.255	0.61519
Running*Lesion	32.07	1	32.07	0.436	0.51149
MS*Running*Lesion	11.94	1	11.94	0.162	0.68839
Error	3964.8	54	73.42		

A5.1.5.1.2.2.7. EPM P49 1 minute intervals 2nd interval Central Square Duration ANOVA

	Univariate Tests of Significance for 2. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	4664.98	1	4664.98	208.024	0.00000
MS	14.353	1	14.353	0.640	0.42720
Running	34.214	1	34.214	1.525	0.22210
Lesion	2.428	1	2.428	0.108	0.74338
MS*Running	0.968	1	0.968	0.043	0.83622
MS*Lesion	0.001	1	0.001	0.000	0.99359
Running*Lesion	32.199	1	32.199	1.435	0.23604
MS*Running*Lesion	6.693	1	6.693	0.298	0.58709
Error	1210.95	54	22.425		

A5.1.5.1.2.2.8. EPM P49 1 minute intervals 2nd Interval Maximum Velocity ANOVA

	Univariate Tests of Significance for 2. Maximum velocity (cm/s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	138479.	1	138479.	541.070	0.00000
MS	365.7	1	365.7	1.428	0.23719
Running	232.6	1	232.6	0.909	0.34463
Lesion	18.6	1	18.6	0.072	0.78836
MS*Running	219.8	1	219.8	0.858	0.35823
MS*Lesion	10.6	1	10.6	0.041	0.83970
Running*Lesion	28.7	1	28.7	0.112	0.73892
MS*Running*Lesion	135.3	1	135.3	0.528	0.47027
Error	13820.6	54	255.9		

A5.1.5.1.2.2.9. EPM P49 1 minute intervals 2nd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Mean velocity (cm/s) (EPM P49 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	3489.46	1	3489.46	999.535	0.00000
MS	3.606	1	3.606	1.033(	0.31398
Running	25.764	1	25.764	7.380	0.00884
Lesion	0.011	1	0.011	0.003	0.95519
MS*Running	0.409	1	0.409	0.117	0.73334
MS*Lesion	0.229	1	0.229	0.065(	0.79879
Running*Lesion	0.60(	1	0.60(	0.171	0.68015
MS*Running*Lesion	4.031	1	4.031	1.154	0.28733
Error	188.51	54	3.491		

A5.1.5.1.2.2.10. EPM P49 1 minute intervals 2nd interval Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 2. Mean velocity (cm/s) (EPM P49 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 3.4911, df = 54.000 Running	{1} 8.1916	{2} 6.9139
1	0		0.009871
2	1	0.009871	

A5.1.5.1.2.3.1. EPM P49 1 minute Time-bins 3rd interval Descriptive Statistics

	Descriptive Statistics (EPM P49 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	3. Total distance (cm) Mean	3. Total distance (cm) Std.Dev.	3. Total distance (cm) Std.Err	3. Total distance (cm) -95.00%	3. Total distance (cm) +95.00%
Total				62	260.186	82.768	10.5116	239.166	281.205
MS	0			31	252.357	80.748	14.5028	222.738	281.976
MS	1			31	268.015	85.338	15.3272	236.712	299.317
Running	0			28	292.186	84.223	15.9168	259.527	324.845
Running	1			34	233.833	72.629	12.4558	208.491	259.174
Lesion	0			31	249.619	54.095	9.7158	229.777	269.462
Lesion	1			31	270.752	103.790	18.6413	232.682	308.823
MS*Running	0	0		14	297.268	86.484	23.1139	247.333	347.203
MS*Running	0	1		17	215.372	54.131	13.1287	187.540	243.203
MS*Running	1	0		14	287.104	84.839	22.6744	238.119	336.089
MS*Running	1	1		17	252.294	85.001	20.6159	208.590	295.998
MS*Lesion	0	0		16	240.909	44.194	11.0486	217.360	264.459
MS*Lesion	0	1		15	264.568	107.563	27.7727	205.001	324.135
MS*Lesion	1	0		15	258.910	63.236	16.3276	223.890	293.929
MS*Lesion	1	1		16	276.550	103.307	25.8268	221.502	331.599
Running*Lesion	0	0		14	279.969	56.902	15.2077	247.114	312.823
Running*Lesion	0	1		14	304.403	105.705	28.2509	243.371	365.436
Running*Lesion	1	0		17	224.625	37.235	9.0308	205.481	243.770
Running*Lesion	1	1		17	243.040	96.504	23.4057	193.422	292.658
MS*Running*Lesi	0	0	0	7	276.306	41.795	15.7972	237.652	314.961
MS*Running*Lesi	0	0	1	7	318.229	115.903	43.8074	211.037	425.422
MS*Running*Lesi	0	1	0	9	213.378	20.074	6.6915	197.947	228.809
MS*Running*Lesi	0	1	1	8	217.614	78.905	27.8974	151.647	283.581
MS*Running*Lesi	1	0	0	7	283.631	72.368	27.3527	216.701	350.561
MS*Running*Lesi	1	0	1	7	290.577	101.636	38.4148	196.579	384.574
MS*Running*Lesi	1	1	0	8	237.279	48.609	17.1859	196.640	277.917
MS*Running*Lesi	1	1	1	9	265.641	109.349	36.4497	181.588	349.694

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Duration in open arms (s) Mean	3. Duration in open arms (s) Std.Dev.	3. Duration in open arms (s) Std.Err	3. Duration in open arms (s) -95.00%	3. Duration in open arms (s) +95.00%
Total				62	5.22729	6.51981	0.82801	3.5715	6.8830
MS	0			31	4.68832	6.10591	1.09665	2.4486	6.9279
MS	1			31	5.76626	6.96780	1.25145	3.2104	8.3220
Running	0			28	6.57639	5.59377	1.05712	4.4073	8.7454
Running	1			34	4.11626	7.08223	1.21459	1.6451	6.5873
Lesion	0			31	3.97480	5.68468	1.02099	1.8896	6.0599
Lesion	1			31	6.47978	7.13268	1.28106	3.8635	9.0960
MS*Running	0	0		14	6.71429	5.79362	1.54841	3.3691	10.0594
MS*Running	0	1		17	3.01986	6.00686	1.45688	-0.0685	6.1083
MS*Running	1	0		14	6.43850	5.60184	1.49715	3.2040	9.6729
MS*Running	1	1		17	5.21266	8.05070	1.95258	1.0733	9.3519
MS*Lesion	0	0		16	2.94792	3.99153	0.99788	0.8209	5.0748
MS*Lesion	0	1		15	6.54474	7.46095	1.92641	2.4130	10.6764
MS*Lesion	1	0		15	5.07014	7.04888	1.82001	1.1666	8.9736
MS*Lesion	1	1		16	6.41888	7.05601	1.76400	2.6590	10.1787
Running*Lesion	0	0		14	4.97408	5.65673	1.51182	1.7079	8.2401
Running*Lesion	0	1		14	8.17871	5.24015	1.40049	5.1531	11.2042
Running*Lesion	1	0		17	3.15186	5.74452	1.39325	0.1983	6.1054
Running*Lesion	1	1		17	5.08066	8.27495	2.00697	0.8260	9.3352
MS*Running*Les	0	0	0	7	5.02381	4.79915	1.81390	0.5853	9.4622
MS*Running*Les	0	0	1	7	8.40477	6.55946	2.47924	2.3382	14.4712
MS*Running*Les	0	1	0	9	1.33333	2.42813	0.80937	-0.5331	3.1997
MS*Running*Les	0	1	1	8	4.91722	8.24407	2.91472	-1.9750	11.8094
MS*Running*Les	1	0	0	7	4.92434	6.80387	2.57162	-1.3681	11.2168
MS*Running*Les	1	0	1	7	7.95265	4.04341	1.52826	4.2131	11.6921
MS*Running*Les	1	1	0	8	5.19771	7.72360	2.73070	-1.2593	11.6548
MS*Running*Les	1	1	1	9	5.22594	8.79943	2.93314	-1.5379	11.9897

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Frequency of entry into open arms Mean	3. Frequency of entry into open arms Std.Dev.	3. Frequency of entry into open arms Std.Err	3. Frequency of entry into open arms -95.00%	3. Frequency of entry into open arms +95.00%
Total				62	1.12903	1.27374	0.16176	0.80556	1.45250
MS	0			31	1.09677	1.37489	0.24693	0.59246	1.60108
MS	1			31	1.16129	1.18593	0.21300	0.72628	1.59629
Running	0			28	1.32142	1.27812	0.24154	0.82582	1.81703
Running	1			34	0.97058	1.26695	0.21728	0.52852	1.41264
Lesion	0			31	0.96774	1.22430	0.21989	0.51866	1.41682
Lesion	1			31	1.29032	1.32145	0.23734	0.80561	1.77503
MS*Running	0	0		14	1.28571	1.43733	0.38414	0.45582	2.11560
MS*Running	0	1		17	0.94117	1.34492	0.32619	0.24968	1.63267
MS*Running	1	0		14	1.35714	1.15072	0.30754	0.69273	2.02155
MS*Running	1	1		17	1.00000	1.22474	0.29704	0.37029	1.62970
MS*Lesion	0	0		16	0.81250	1.10867	0.27716	0.22172	1.40327
MS*Lesion	0	1		15	1.40000	1.59463	0.41173	0.51692	2.28307
MS*Lesion	1	0		15	1.13333	1.35576	0.35005	0.38253	1.88413
MS*Lesion	1	1		16	1.18750	1.04682	0.26170	0.62968	1.74531
Running*Lesion	0	0		14	1.14285	1.23145	0.32912	0.43183	1.85387
Running*Lesion	0	1		14	1.50000	1.34450	0.35933	0.72370	2.27629
Running*Lesion	1	0		17	0.82352	1.23669	0.29994	0.18768	1.45937
Running*Lesion	1	1		17	1.11764	1.31730	0.31949	0.44035	1.79494
MS*Running*Les	0	0	0	7	0.85714	0.89973	0.34006	0.02502	1.68925
MS*Running*Les	0	0	1	7	1.71428	1.79947	0.68013	0.05005	3.37851
MS*Running*Les	0	1	0	9	0.77777	1.30170	0.43390	-0.22280	1.77835
MS*Running*Les	0	1	1	8	1.12500	1.45773	0.51538	-0.09369	2.34369
MS*Running*Les	1	0	0	7	1.42857	1.51185	0.57142	0.03033	2.82680
MS*Running*Les	1	0	1	7	1.28571	0.75592	0.28571	0.58659	1.98483
MS*Running*Les	1	1	0	8	0.87500	1.24642	0.44067	-0.16703	1.91703
MS*Running*Les	1	1	1	9	1.11111	1.26929	0.42309	0.13544	2.08677

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Duration in closed arms (s) Mean	3. Duration in closed arms (s) Std.Dev.	3. Duration in closed arms (s) Std.Err	3. Duration in closed arms (s) -95.00%	3. Duration in closed arms (s) +95.00%
Total				62	37.1256	8.7792	1.11497	34.8961	39.3551
MS	0			31	37.3270	8.1656	1.46658	34.3318	40.3222
MS	1			31	36.9242	9.4847	1.70350	33.4452	40.4032
Running	0			28	35.8239	6.7410	1.27393	33.2100	38.4378
Running	1			34	38.1975	10.1327	1.73775	34.6620	41.7330
Lesion	0			31	37.5774	7.7401	1.39017	34.7383	40.4165
Lesion	1			31	36.6738	9.8177	1.76332	33.0726	40.2750
MS*Running	0	0		14	36.1504	6.1867	1.65348	32.5783	39.7225
MS*Running	0	1		17	38.2959	9.5766	2.32267	33.3721	43.2198
MS*Running	1	0		14	35.4975	7.4747	1.99772	31.1817	39.8133
MS*Running	1	1		17	38.0991	10.9558	2.65718	32.4662	43.7321
MS*Lesion	0	0		16	37.8408	6.5772	1.64432	34.3360	41.3456
MS*Lesion	0	1		15	36.7789	9.7931	2.52857	31.3556	42.2021
MS*Lesion	1	0		15	37.2964	9.0478	2.33615	32.2858	42.3069
MS*Lesion	1	1		16	36.5753	10.1609	2.54023	31.1609	41.9896
Running*Lesion	0	0		14	36.1125	6.4472	1.72310	32.3900	39.8351
Running*Lesion	0	1		14	35.5353	7.2547	1.93891	31.3466	39.7241
Running*Lesion	1	0		17	38.7837	8.6680	2.10230	34.3270	43.2404
Running*Lesion	1	1		17	37.6113	11.6575	2.82736	31.6176	43.6051
MS*Running*Les	0	0	0	7	37.2652	2.3225	0.87784	35.1172	39.4133
MS*Running*Les	0	0	1	7	35.0356	8.6392	3.26534	27.0455	43.0256
MS*Running*Les	0	1	0	9	38.2885	8.7494	2.91648	31.5631	45.0139
MS*Running*Les	0	1	1	8	38.3043	11.0515	3.90732	29.0650	47.5437
MS*Running*Les	1	0	0	7	34.9598	9.0314	3.41358	26.6071	43.3126
MS*Running*Les	1	0	1	7	36.0351	6.2301	2.35477	30.2732	41.7970
MS*Running*Les	1	1	0	8	39.3408	9.1420	3.23219	31.6979	46.9838
MS*Running*Les	1	1	1	9	36.9954	12.8069	4.26899	27.1511	46.8397

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Duration in centra square (s) Mean	3. Duration in centra square (s) Std.Dev.	3. Duration in centra square (s) Std.Err	3. Duration in centra square (s) -95.00%	3. Duration in centra square (s) +95.00%
Total				62	6.64707	5.17198	0.65684	5.33363	7.9605
MS	0			31	6.98465	5.39516	0.96900	5.00568	8.9636
MS	1			31	6.30950	5.00472	0.89887	4.47375	8.1452
Running	0			28	6.59962	4.19193	0.79220	4.97415	8.2250
Running	1			34	6.68615	5.92157	1.01554	4.62002	8.7522
Lesion	0			31	7.44777	5.33982	0.95906	5.48911	9.4064
Lesion	1			31	5.84637	4.95498	0.88994	4.02887	7.6638
MS*Running	0	0		14	6.13525	3.05564	0.81665	4.37098	7.8995
MS*Running	0	1		17	7.68414	6.77049	1.64208	4.20307	11.1652
MS*Running	1	0		14	7.06398	5.16671	1.38086	4.08081	10.0471
MS*Running	1	1		17	5.68816	4.93615	1.19719	3.15022	8.2261
MS*Lesion	0	0		16	8.21121	5.69676	1.42419	5.17562	11.2468
MS*Lesion	0	1		15	5.67631	4.90400	1.26620	2.96056	8.3920
MS*Lesion	1	0		15	6.63343	4.99529	1.28977	3.86713	9.3997
MS*Lesion	1	1		16	6.00581	5.15768	1.28942	3.25747	8.7541
Running*Lesion	0	0		14	7.91333	4.68567	1.25229	5.20790	10.6187
Running*Lesion	0	1		14	5.28590	3.28991	0.87926	3.38636	7.1854
Running*Lesion	1	0		17	7.06437	5.93956	1.44055	4.01052	10.1182
Running*Lesion	1	1		17	6.30794	6.06130	1.47008	3.19151	9.4243
MS*Running*Les	0	0	0	7	6.71089	3.42259	1.29362	3.54551	9.8762
MS*Running*Les	0	0	1	7	5.55962	2.78257	1.05171	2.98617	8.1330
MS*Running*Les	0	1	0	9	9.37812	6.96867	2.32289	4.02153	14.7347
MS*Running*Les	0	1	1	8	5.77841	6.43710	2.27586	0.39686	11.1599
MS*Running*Les	1	0	0	7	9.11577	5.69934	2.15414	3.84476	14.3867
MS*Running*Les	1	0	1	7	5.01218	3.94125	1.48965	1.36713	8.6572
MS*Running*Les	1	1	0	8	4.46139	3.24191	1.14619	1.75108	7.1717
MS*Running*Les	1	1	1	9	6.77863	6.05741	2.01913	2.12248	11.4347

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Maximum velocity (cm/s) Mean	3. Maximum velocity (cm/s) Std.Dev.	3. Maximum velocity (cm/s) Std.Err	3. Maximum velocity (cm/s) -95.00%	3. Maximum velocity (cm/s) +95.00%
Total				62	39.5996	8.7904	1.11638	37.3672	41.8319
MS	0			31	38.9899	6.7406	1.21065	36.5174	41.4624
MS	1			31	40.2093	10.5315	1.89152	36.3463	44.0723
Running	0			28	41.6979	9.1051	1.72070	38.1673	45.2285
Running	1			34	37.8715	8.2578	1.41621	34.9902	40.7528
Lesion	0			31	39.8456	7.6278	1.37000	37.0477	42.6435
Lesion	1			31	39.3536	9.9402	1.78532	35.7075	42.9997
MS*Running	0	0		14	41.5870	6.6557	1.77883	37.7441	45.4300
MS*Running	0	1		17	36.8511	6.1997	1.50367	33.6635	40.0387
MS*Running	1	0		14	41.8088	11.3074	3.02203	35.2801	48.3375
MS*Running	1	1		17	38.8920	9.9998	2.42530	33.7506	44.0334
MS*Lesion	0	0		16	38.5003	6.4770	1.61924	35.0489	41.9516
MS*Lesion	0	1		15	39.5122	7.2006	1.85919	35.5246	43.4998
MS*Lesion	1	0		15	41.2806	8.6866	2.24287	36.4701	46.0911
MS*Lesion	1	1		16	39.2049	12.2137	3.05343	32.6966	45.7131
Running*Lesion	0	0		14	42.4705	7.1495	1.91079	38.3425	46.5986
Running*Lesion	0	1		14	40.9253	10.9444	2.92503	34.6061	47.2444
Running*Lesion	1	0		17	37.6838	7.5212	1.82417	33.8168	41.5509
Running*Lesion	1	1		17	38.0592	9.1652	2.22290	33.3469	42.7716
MS*Running*Les	0	0	0	7	41.8720	5.7807	2.18491	36.5257	47.2183
MS*Running*Les	0	0	1	7	41.3020	7.8978	2.98510	33.9977	48.6063
MS*Running*Les	0	1	0	9	35.8778	5.9926	1.99753	31.2714	40.4841
MS*Running*Les	0	1	1	8	37.9461	6.6503	2.35124	32.3863	43.5059
MS*Running*Les	1	0	0	7	43.0690	8.7463	3.30580	34.9800	51.1580
MS*Running*Les	1	0	1	7	40.5485	14.0292	5.30256	27.5736	53.5234
MS*Running*Les	1	1	0	8	39.7157	8.9077	3.14936	32.2686	47.1627
MS*Running*Les	1	1	1	9	38.1598	11.3701	3.79006	29.4199	46.8997

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Mean velocity (cm/s) Mean	3. Mean velocity (cm/s) Std.Dev.	3. Mean velocity (cm/s) Std.Err	3. Mean velocity (cm/s) -95.00%	3. Mean velocity (cm/s) +95.00%
Total				62	5.33412	1.70562	0.21661	4.90098	5.76727
MS	0			31	5.17147	1.65331	0.29694	4.56503	5.77791
MS	1			31	5.49677	1.76837	0.31761	4.84813	6.14542
Running	0			28	5.98950	1.72045	0.32513	5.32238	6.65663
Running	1			34	4.79440	1.51365	0.25959	4.26626	5.32254
Lesion	0			31	5.11656	1.11723	0.20066	4.70676	5.52637
Lesion	1			31	5.55168	2.13757	0.38392	4.76761	6.33576
MS*Running	0	0		14	6.09239	1.76306	0.47119	5.07443	7.11036
MS*Running	0	1		17	4.41307	1.11643	0.27077	3.83905	4.98709
MS*Running	1	0		14	5.88661	1.73678	0.46417	4.88382	6.88940
MS*Running	1	1		17	5.17573	1.78047	0.43182	4.26030	6.09117
MS*Lesion	0	0		16	4.93764	0.92070	0.23017	4.44703	5.42825
MS*Lesion	0	1		15	5.42090	2.19544	0.56686	4.20510	6.63669
MS*Lesion	1	0		15	5.30742	1.30033	0.33574	4.58732	6.02752
MS*Lesion	1	1		16	5.67430	2.14632	0.53658	4.53060	6.81799
Running*Lesion	0	0		14	5.74942	1.17584	0.31425	5.07051	6.42833
Running*Lesion	0	1		14	6.22958	2.15427	0.57575	4.98575	7.47342
Running*Lesion	1	0		17	4.59538	0.76024	0.18438	4.20450	4.98627
Running*Lesion	1	1		17	4.99341	2.01578	0.48889	3.95700	6.02983
MS*Running*Les	0	0	0	7	5.67382	0.87520	0.33079	4.86440	6.48325
MS*Running*Les	0	0	1	7	6.51096	2.35798	0.89123	4.33019	8.69173
MS*Running*Les	0	1	0	9	4.36505	0.41461	0.13820	4.04635	4.68375
MS*Running*Les	0	1	1	8	4.46709	1.62672	0.57513	3.10712	5.82706
MS*Running*Les	1	0	0	7	5.82502	1.48873	0.56268	4.44817	7.20187
MS*Running*Les	1	0	1	7	5.94820	2.07615	0.78471	4.02808	7.86832
MS*Running*Les	1	1	0	8	4.85451	0.98978	0.34994	4.02703	5.68200
MS*Running*Les	1	1	1	9	5.46126	2.29957	0.76652	3.69365	7.22887

A5.1.5.1.2.3.2. EPM P49 1 minute intervals 3rd interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 3. Total distance (cm) (EPM P49 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	423625	1	423625	665.980	0.00000
MS	2551	1	2551	0.401	0.52921
Running	5284	1	5284	8.306	0.00565
Lesion	6359	1	6359	0.999	0.32183
MS*Running	8155	1	8155	1.282	0.26252
MS*Lesion	113	1	113	0.017	0.89454
Running*Lesion	254	1	254	0.039	0.84246
MS*Running*Lesion	3347	1	3347	0.526	0.47134
Error	34349	54	6361		

A5.1.5.1.2.3.3. EPM P49 1 minute intervals 3rd interval Distance Travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 3. Total distance (cm) (EPM P49 1 min tim
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 6360.9, df = 54.000

Cell No.	Running	{1} 292.19	{2} 233.83
1	0		0.006025
2	1	0.006025	

A5.1.5.1.2.3.4. EPM P49 1 minute intervals 3rd interval Open Arm Duration ANOVA

Univariate Tests of Significance for 3. Duration in open arms (s) (EPM P49
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1770.00	1	1770.00	40.9838	0.00000
MS	12.567	1	12.567	0.2909	0.59181
Running	88.883	1	88.883	2.0580	0.15716
Lesion	96.228	1	96.228	2.2281	0.14133
MS*Running	21.389	1	21.389	0.4952	0.48461
MS*Lesion	14.636	1	14.636	0.3388	0.56289
Running*Lesion	7.497	1	7.497	0.1735	0.67859
MS*Running*Lesion	9.830	1	9.830	0.2276	0.63522
Error	2332.14	54	43.188		

A5.1.5.1.2.3.5. EPM P49 1 minute intervals 3rd interval Open Arm Frequency ANOVA

Univariate Tests of Significance for 3. Frequency of entry into open arms (
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	80.6527	1	80.6527	46.5190	0.00000
MS	0.0490	1	0.0490	0.0282	0.86709
Running	1.8695	1	1.8695	1.0783	0.30370
Lesion	1.6133	1	1.6133	0.9305	0.33901
MS*Running	0.0033	1	0.0033	0.0019	0.96486
MS*Lesion	1.1829	1	1.1829	0.6822	0.41243
Running*Lesion	0.0164	1	0.0164	0.0094	0.92280
MS*Running*Lesion	0.7570	1	0.7570	0.4366	0.51154
Error	93.6230	54	1.7337		

A5.1.5.1.2.3.6. EPM P49 1 minute intervals 3rd interval Closed Arm Duration ANOVA

Effect	Univariate Tests of Significance for 3. Duration in closed arms (s) (EPM P4 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	84079.2	1	84079.2	994.136	0.00000
MS	2.34	1	2.34	0.027	0.86853
Running	88.92	1	88.92	1.051	0.30976
Lesion	11.63	1	11.63	0.137	0.71220
MS*Running	1.05	1	1.05	0.012	0.91148
MS*Lesion	0.85	1	0.85	0.010	0.92036
Running*Lesion	1.32	1	1.32	0.015	0.90091
MS*Running*Lesion	30.76	1	30.76	0.363	0.54896
Error	4567.0	54	84.58		

A5.1.5.1.2.3.7. EPM 1 minute intervals 3rd interval Central Square Duration ANOVA

Effect	Univariate Tests of Significance for 3. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2670.73	1	2670.73	99.4277	0.00000
MS	4.062	1	4.062	0.1512	0.69888
Running	0.000	1	0.000	0.0000	1.00000
Lesion	40.949	1	40.949	1.5244	0.22229
MS*Running	31.94	1	31.94	1.1892	0.28032
MS*Lesion	8.421	1	8.421	0.3135	0.57784
Running*Lesion	15.12	1	15.12	0.5628	0.45635
MS*Running*Lesion	75.37	1	75.37	2.8060	0.09969
Error	1450.50	54	26.861		

A5.1.5.1.2.3.8. EPM 1 minute intervals 3rd interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Maximum velocity (cm/s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	97194.1	1	97194.1	1192.50	0.00000
MS	19.36	1	19.36	0.238	0.62795
Running	218.25	1	218.25	2.678	0.10757
Lesion	6.37	1	6.37	0.078	0.78091
MS*Running	12.47	1	12.47	0.153	0.69717
MS*Lesion	29.78	1	29.78	0.365	0.54808
Running*Lesion	12.44	1	12.44	0.153	0.69759
MS*Running*Lesion	2.68	1	2.68	0.033	0.85667
Error	4401.2	54	81.50		

A5.1.5.1.2.3.9. EPM 1 minute intervals 3rd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Mean velocity (cm/s) (EPM P49 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	1780.40	1	1780.40	657.706	0.00000
MS	1.101	1	1.101	0.406	0.52628
Running	22.169	1	22.169	8.189	0.00598
Lesion	2.669	1	2.669	0.986	0.32512
MS*Running	3.442	1	3.442	1.271	0.26449
MS*Lesion	0.042	1	0.042	0.015	0.90138
Running*Lesion	0.061	1	0.061	0.022	0.88159
MS*Running*Lesion	1.423	1	1.423	0.525	0.47155
Error	146.17	54	2.707		

A5.1.5.1.2.3.10. EPM 1 minute intervals 3rd Interval Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 3. Mean velocity (cm/s) (EPM P49 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 2.7070, df = 54.000 Running	{1} 5.9895	{2} 4.7944
1	0		0.00636
2	1	0.00636	

A5.1.5.1.2.4.1. EPM P49 1 minute Time-bins 4th interval Descriptive Statistics

	Descriptive Statistics (EPM P49 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	4. Total distance (cm) Mean	4. Total distance (cm) Std.Dev.	4. Total distance (cm) Std.Err	4. Total distance (cm) -95.00%	4. Total distance (cm) +95.00%
Total				62	188.100	85.233	10.8246	166.455	209.746
MS	0			31	178.352	83.394	14.9781	147.762	208.941
MS	1			31	197.849	87.295	15.6787	165.829	229.869
Running	0			28	212.734	74.813	14.1383	183.725	241.744
Running	1			34	167.814	88.940	15.2532	136.781	198.847
Lesion	0			31	187.722	77.093	13.8464	159.443	216.000
Lesion	1			31	188.479	93.956	16.8751	154.015	222.942
MS*Running	0	0		14	211.089	74.618	19.9426	168.006	254.173
MS*Running	0	1		17	151.391	82.498	20.0088	108.974	193.808
MS*Running	1	0		14	214.379	77.786	20.7893	169.467	259.292
MS*Running	1	1		17	184.236	94.531	22.9272	135.633	232.840
MS*Lesion	0	0		16	168.211	76.822	19.2055	127.275	209.147
MS*Lesion	0	1		15	189.168	91.306	23.5751	138.605	239.732
MS*Lesion	1	0		15	208.534	74.253	19.1722	167.413	249.654
MS*Lesion	1	1		16	187.832	99.366	24.8416	134.884	240.781
Running*Lesion	0	0		14	214.913	73.858	19.7395	172.268	257.558
Running*Lesion	0	1		14	210.555	78.480	20.9747	165.242	255.869
Running*Lesion	1	0		17	165.329	74.377	18.0391	127.088	203.571
Running*Lesion	1	1		17	170.298	103.779	25.1702	116.939	223.656
MS*Running*Les	0	0	0	7	195.292	62.584	23.6548	137.411	253.173
MS*Running*Les	0	0	1	7	226.887	86.975	32.8735	146.448	307.326
MS*Running*Les	0	1	0	9	147.148	83.589	27.8631	82.896	211.401
MS*Running*Les	0	1	1	8	156.164	86.729	30.6635	83.657	228.672
MS*Running*Les	1	0	0	7	234.534	83.691	31.6322	157.133	311.936
MS*Running*Les	1	0	1	7	194.224	71.818	27.1447	127.803	260.645
MS*Running*Les	1	1	0	8	185.783	61.286	21.6682	134.546	237.020
MS*Running*Les	1	1	1	9	182.861	120.753	40.2510	90.042	275.680

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in open arms (s) Mean	4. Duration in open arms (s) Std.Dev.	4. Duration in open arms (s) Std.Err	4. Duration in open arms (s) -95.00%	4. Duration in open arms (s) +95.00%
Total				62	2.68883	6.28134	0.79773	1.0936	4.2840
MS	0			31	3.31669	7.03055	1.26272	0.7378	5.8955
MS	1			31	2.06098	5.47562	0.98345	0.0525	4.0694
Running	0			28	3.08333	6.35401	1.20079	0.6195	5.5471
Running	1			34	2.36396	6.29753	1.08001	0.1666	4.5612
Lesion	0			31	2.67742	6.68941	1.20145	0.2237	5.1311
Lesion	1			31	2.70025	5.95628	1.06978	0.5154	4.8850
MS*Running	0	0		14	4.45237	7.22839	1.93186	0.2788	8.6259
MS*Running	0	1		17	2.38143	6.94032	1.68327	-1.1869	5.9498
MS*Running	1	0		14	1.71429	5.25034	1.40321	-1.3171	4.7457
MS*Running	1	1		17	2.34649	5.79894	1.40645	-0.6350	5.3280
MS*Lesion	0	0		16	3.07291	7.70786	1.92696	-1.0343	7.1801
MS*Lesion	0	1		15	3.57672	6.49026	1.67577	-0.0174	7.1709
MS*Lesion	1	0		15	2.25556	5.64488	1.45750	-0.8704	5.3815
MS*Lesion	1	1		16	1.87856	5.49100	1.37275	-1.0473	4.8045
Running*Lesion	0	0		14	3.20238	6.60653	1.76566	-0.6121	7.0168
Running*Lesion	0	1		14	2.96428	6.33844	1.69402	-0.6954	6.6239
Running*Lesion	1	0		17	2.24510	6.92824	1.68034	-1.3170	5.8072
Running*Lesion	1	1		17	2.48282	5.81084	1.40933	-0.5048	5.4704
MS*Running*Les	0	0	0	7	3.16666	6.36468	2.40562	-2.7197	9.0530
MS*Running*Les	0	0	1	7	5.73808	8.29706	3.13599	-1.9354	13.4115
MS*Running*Les	0	1	0	9	3.00000	9.00002	3.00000	-3.9180	9.9180
MS*Running*Les	0	1	1	8	1.68553	4.05971	1.43532	-1.7084	5.0795
MS*Running*Les	1	0	0	7	3.23810	7.35218	2.77886	-3.5615	10.0377
MS*Running*Les	1	0	1	7	0.19047	0.50395	0.19047	-0.2756	0.6565
MS*Running*Les	1	1	0	8	1.39583	3.94801	1.39583	-1.9047	4.6964
MS*Running*Les	1	1	1	9	3.19152	7.20486	2.40162	-2.3466	8.7296

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Frequency of entry into open arms Mean	4. Frequency of entry into open arms Std.Dev.	4. Frequency of entry into open arms Std.Err	4. Frequency of entry into open arms -95.00%	4. Frequency of entry into open arms +95.00%
Total				62	0.56451	1.11061	0.14104	0.28247	0.84656
MS	0			31	0.58064	1.05748	0.18993	0.19275	0.96853
MS	1			31	0.54838	1.17866	0.21169	0.11605	0.98072
Running	0			28	0.71428	1.18187	0.22335	0.25600	1.17256
Running	1			34	0.44117	1.04999	0.18007	0.07481	0.80753
Lesion	0			31	0.61290	1.35836	0.24397	0.11465	1.11115
Lesion	1			31	0.51612	0.81121	0.14569	0.21857	0.81368
MS*Running	0	0		14	0.71428	0.82542	0.22060	0.23770	1.19086
MS*Running	0	1		17	0.47058	1.23073	0.29849	-0.16219	1.10337
MS*Running	1	0		14	0.71428	1.48989	0.39819	-0.14595	1.57452
MS*Running	1	1		17	0.41176	0.87026	0.21106	-0.03568	0.85921
MS*Lesion	0	0		16	0.56250	1.31497	0.32874	-0.13820	1.26320
MS*Lesion	0	1		15	0.60000	0.73678	0.19023	0.19198	1.00802
MS*Lesion	1	0		15	0.66666	1.44749	0.37374	-0.13492	1.46826
MS*Lesion	1	1		16	0.43750	0.89209	0.22302	-0.03786	0.91286
Running*Lesion	0	0		14	0.92857	1.49173	0.39868	0.06726	1.78987
Running*Lesion	0	1		14	0.50000	0.75955	0.20299	0.06144	0.93855
Running*Lesion	1	0		17	0.35294	1.22173	0.29631	-0.27521	0.98110
Running*Lesion	1	1		17	0.52941	0.87447	0.21209	0.07979	0.97902
MS*Running*Les	0	0	0	7	0.57142	0.78679	0.29738	-0.15623	1.29909
MS*Running*Les	0	0	1	7	0.85714	0.89973	0.34006	0.02502	1.68925
MS*Running*Les	0	1	0	9	0.55555	1.66666	0.55555	-0.72555	1.83666
MS*Running*Les	0	1	1	8	0.37500	0.51754	0.18298	-0.05768	0.80768
MS*Running*Les	1	0	0	7	1.28571	1.97604	0.74687	-0.54182	3.11325
MS*Running*Les	1	0	1	7	0.14285	0.37796	0.14285	-0.20670	0.49241
MS*Running*Les	1	1	0	8	0.12500	0.35355	0.12500	-0.17057	0.42057
MS*Running*Les	1	1	1	9	0.66666	1.11803	0.37267	-0.19273	1.52606

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in closed arms (s) Mean	4. Duration in closed arms (s) Std.Dev.	4. Duration in closed arms (s) Std.Err	4. Duration in closed arms (s) -95.00%	4. Duration in closed arms (s) +95.00%
Total				62	40.2045	10.9596	1.39188	37.4212	42.9877
MS	0			31	38.8565	13.1956	2.37000	34.0163	43.6967
MS	1			31	41.5524	8.1457	1.46302	38.5646	44.5403
Running	0			28	39.4178	10.4767	1.97991	35.3554	43.4803
Running	1			34	40.8523	11.4572	1.96489	36.8547	44.8499
Lesion	0			31	40.9232	11.0993	1.99350	36.8520	44.9945
Lesion	1			31	39.4857	10.9530	1.96723	35.4681	43.5033
MS*Running	0	0		14	36.5801	12.6051	3.36886	29.3022	43.8581
MS*Running	0	1		17	40.7311	13.7520	3.33534	33.6605	47.8017
MS*Running	1	0		14	42.2555	7.1925	1.92230	38.1026	46.4084
MS*Running	1	1		17	40.9735	9.0327	2.19076	36.3293	45.6177
MS*Lesion	0	0		16	40.3506	13.5557	3.38893	33.1272	47.5739
MS*Lesion	0	1		15	37.2627	13.0754	3.37605	30.0218	44.5036
MS*Lesion	1	0		15	41.5340	8.1444	2.10287	37.0238	46.0443
MS*Lesion	1	1		16	41.5697	8.4141	2.10352	37.0862	46.0533
Running*Lesion	0	0		14	38.9929	10.5193	2.81140	32.9192	45.0666
Running*Lesion	0	1		14	39.8427	10.8129	2.88989	33.5995	46.0860
Running*Lesion	1	0		17	42.5129	11.6248	2.81944	36.5359	48.4899
Running*Lesion	1	1		17	39.1917	11.3904	2.76258	33.3352	45.0481
MS*Running*Les	0	0	0	7	38.5748	12.5745	4.75273	26.9453	50.2044
MS*Running*Les	0	0	1	7	34.5854	13.2987	5.02645	22.2861	46.8847
MS*Running*Les	0	1	0	9	41.7317	14.8678	4.95594	30.3033	53.1602
MS*Running*Les	0	1	1	8	39.6054	13.3004	4.70240	28.4859	50.7248
MS*Running*Les	1	0	0	7	39.4110	9.0126	3.40647	31.0756	47.7463
MS*Running*Les	1	0	1	7	45.1000	3.4613	1.30826	41.8988	48.3012
MS*Running*Les	1	1	0	8	43.3917	7.3883	2.61215	37.2149	49.5685
MS*Running*Les	1	1	1	9	38.8239	10.2162	3.40542	30.9710	46.6769

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in central square (s) Mean	4. Duration in central square (s) Std.Dev.	4. Duration in central square (s) Std.Err	4. Duration in central square (s) -95.00%	4. Duration in central square (s) +95.00%
Total				62	6.10665	6.8370	0.86830	4.3703	7.8429
MS	0			31	6.82679	8.4503	1.51772	3.7271	9.9264
MS	1			31	5.38652	4.7505	0.85322	3.6440	7.1290
Running	0			28	6.49881	5.9745	1.12908	4.1821	8.8155
Running	1			34	5.78370	7.5474	1.29437	3.1502	8.4171
Lesion	0			31	5.39930	6.1662	1.10749	3.1374	7.6611
Lesion	1			31	6.81401	7.4826	1.34393	4.0693	9.5586
MS*Running	0	0		14	7.96744	7.4016	1.97817	3.6938	12.2410
MS*Running	0	1		17	5.88743	9.3435	2.26614	1.0834	10.6914
MS*Running	1	0		14	5.03018	3.8348	1.02490	2.8160	7.2443
MS*Running	1	1		17	5.67998	5.4921	1.33203	2.8561	8.5037
MS*Lesion	0	0		16	5.57643	7.3520	1.83800	1.6588	9.4940
MS*Lesion	0	1		15	8.16050	9.5609	2.46863	2.8658	13.4551
MS*Lesion	1	0		15	5.21036	4.8467	1.25143	2.5263	7.8944
MS*Lesion	1	1		16	5.55167	4.8114	1.20287	2.9878	8.1155
Running*Lesion	0	0		14	6.80466	6.4876	1.73390	3.0587	10.5505
Running*Lesion	0	1		14	6.19296	5.6431	1.50818	2.9347	9.4511
Running*Lesion	1	0		17	4.24195	5.8261	1.41304	1.2464	7.2374
Running*Lesion	1	1		17	7.32546	8.8596	2.14877	2.7702	11.8806
MS*Running*Les	0	0	0	7	7.25844	8.6667	3.27571	-0.7569	15.2738
MS*Running*Les	0	0	1	7	8.67643	6.5126	2.46156	2.6532	14.6996
MS*Running*Les	0	1	0	9	4.26821	6.3727	2.12426	-0.6303	9.1667
MS*Running*Les	0	1	1	8	7.70905	12.0817	4.27155	-2.3915	17.8096
MS*Running*Les	1	0	0	7	6.35088	3.9500	1.49297	2.6977	10.0040
MS*Running*Les	1	0	1	7	3.70948	3.4914	1.31965	0.4804	6.9385
MS*Running*Les	1	1	0	8	4.21241	5.5830	1.97389	-0.4551	8.8799
MS*Running*Les	1	1	1	9	6.98449	5.3837	1.79459	2.8461	11.1228

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	4. Maximun velocity (cm/s) Mean	4. Maximum velocity (cm/s) Std.Dev.	4. Maximun velocity (cm/s) Std.Err	4. Maximum velocity (cm/s) -95.00%	4. Maximum velocity (cm/s) +95.00%
Total				62	34.6222	21.8093	2.7697	29.0837	40.1608
MS	0			31	31.6288	11.3666	2.0415	27.4594	35.7981
MS	1			31	37.6157	28.6257	5.1413	27.1157	48.1157
Running	0			28	34.3136	10.5972	2.0026	30.2044	38.4228
Running	1			34	34.8764	28.0570	4.8117	25.0869	44.6660
Lesion	0			31	33.9370	13.2024	2.3712	29.0943	38.7797
Lesion	1			31	35.3075	28.1403	5.0541	24.9855	45.6294
MS*Running	0	0		14	33.0840	8.6585	2.3140	28.0847	38.0833
MS*Running	0	1		17	30.4304	13.3401	3.2354	23.5715	37.2892
MS*Running	1	0		14	35.5432	12.4504	3.3275	28.3546	42.7319
MS*Running	1	1		17	39.3225	37.4650	9.0866	20.0597	58.5852
MS*Lesion	0	0		16	31.3352	11.5135	2.8784	25.2000	37.4703
MS*Lesion	0	1		15	31.9419	11.6027	2.9958	25.5165	38.3673
MS*Lesion	1	0		15	36.7123	14.6795	3.7902	28.5831	44.8416
MS*Lesion	1	1		16	38.4627	37.8966	9.4741	18.2690	58.6564
Running*Lesion	0	0		14	36.7247	11.5603	3.0896	30.0500	43.3994
Running*Lesion	0	1		14	31.9025	9.3316	2.4939	26.5146	37.2904
Running*Lesion	1	0		17	31.6413	14.3470	3.4796	24.2647	39.0178
Running*Lesion	1	1		17	38.1116	37.3566	9.0603	18.9046	57.3186
MS*Running*Les	0	0	0	7	33.7658	9.2235	3.4861	25.2354	42.2962
MS*Running*Les	0	0	1	7	32.4021	8.7336	3.3010	24.3249	40.4794
MS*Running*Les	0	1	0	9	29.4447	13.2498	4.4166	19.2600	39.6294
MS*Running*Les	0	1	1	8	31.5392	14.2643	5.0432	19.6139	43.4646
MS*Running*Les	1	0	0	7	39.6836	13.5665	5.1276	27.1366	52.2306
MS*Running*Les	1	0	1	7	31.4029	10.5741	3.9966	21.6235	41.1823
MS*Running*Les	1	1	0	8	34.1124	16.0207	5.6641	20.7188	47.5061
MS*Running*Les	1	1	1	9	43.9536	50.3130	16.7710	5.2796	82.6277

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	4. Mean velocity (cm/s) Mean	4. Mean velocity (cm/s) Std.Dev.	4. Mean velocity (cm/s) Std.Err	4. Mean velocity (cm/s) -95.00%	4. Mean velocity (cm/s) +95.00%
Total				62	3.86009	1.76235	0.22381	3.41253	4.30764
MS	0			31	3.65855	1.71501	0.30802	3.02948	4.28762
MS	1			31	4.06163	1.81386	0.32578	3.39629	4.72696
Running	0			28	4.36283	1.53739	0.29054	3.76668	4.95897
Running	1			34	3.44607	1.84832	0.31698	2.80116	4.09098
Lesion	0			31	3.85191	1.59425	0.28633	3.26713	4.43669
Lesion	1			31	3.86827	1.94255	0.34889	3.15573	4.58080
MS*Running	0	0		14	4.32636	1.52250	0.40690	3.44730	5.20543
MS*Running	0	1		17	3.10859	1.70877	0.41443	2.23002	3.98716
MS*Running	1	0		14	4.39929	1.60876	0.42996	3.47042	5.32816
MS*Running	1	1		17	3.78355	1.97083	0.47799	2.77024	4.79687
MS*Lesion	0	0		16	3.45107	1.58473	0.39618	2.60662	4.29551
MS*Lesion	0	1		15	3.87987	1.87357	0.48375	2.84232	4.91742
MS*Lesion	1	0		15	4.27948	1.54147	0.39800	3.42584	5.13312
MS*Lesion	1	1		16	3.85739	2.06653	0.51663	2.75621	4.95857
Running*Lesion	0	0		14	4.41728	1.53245	0.40956	3.53247	5.30210
Running*Lesion	0	1		14	4.30837	1.59818	0.42713	3.38560	5.23113
Running*Lesion	1	0		17	3.38631	1.53215	0.37160	2.59855	4.17407
Running*Lesion	1	1		17	3.50583	2.16588	0.52530	2.39224	4.61943
MS*Running*Lesi	0	0	0	7	4.01162	1.29046	0.48774	2.81814	5.20510
MS*Running*Lesi	0	0	1	7	4.64111	1.76803	0.66825	3.00595	6.27626
MS*Running*Lesi	0	1	0	9	3.01508	1.72368	0.57456	1.69014	4.34002
MS*Running*Lesi	0	1	1	8	3.21378	1.80406	0.63783	1.70555	4.72202
MS*Running*Lesi	1	0	0	7	4.82295	1.74326	0.65889	3.21070	6.43520
MS*Running*Lesi	1	0	1	7	3.97563	1.46622	0.55417	2.61960	5.33165
MS*Running*Lesi	1	1	0	8	3.80394	1.26239	0.44632	2.74855	4.85933
MS*Running*Lesi	1	1	1	9	3.76543	2.52451	0.84150	1.82491	5.70595

A5.1.5.1.2.4.2. EPM P49 1 minute intervals 4th minute Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 4. Total distance (cm) (EPM P49 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	222221	1	222221	305.066	0.00000
MS	495	1	495	0.680	0.41314
Running	3069	1	3069	4.213	0.04495
Lesion	7	1	7	0.000	0.97612
MS*Running	330	1	330	0.454	0.50329
MS*Lesion	673	1	673	0.924	0.34053
Running*Lesion	21	1	21	0.028	0.86576
MS*Running*Lesion	344	1	344	0.473	0.49454
Error	39335	54	728		

A5.1.5.1.2.4.3. EPM P49 1 minute intervals 4th minute Distance Travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 4. Total distance (cm) (EPM P49 1 min tim
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 7284.4, df = 54.000

Cell No.	Running	{1} 212.73	{2} 167.81
1	0		0.04408
2	1	0.04408	

A5.1.5.1.2.4.4. EPM P49 1 minute intervals 4th minute Open Arm Duration ANOVA

Univariate Tests of Significance for 4. Duration in open arms (s) (EPM P49
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	447.30	1	447.303	10.6420	0.00191
MS	29.77	1	29.773	0.7083	0.40370
Running	8.97	1	8.974	0.2135	0.64588
Lesion	0.00	1	0.000	0.0000	1.00000
MS*Running	27.71	1	27.713	0.6593	0.42036
MS*Lesion	6.031	1	6.031	0.1434	0.70631
Running*Lesion	0.87	1	0.878	0.0209	0.88560
MS*Running*Lesion	73.01	1	73.012	1.7370	0.19307
Error	2269.71	54	42.031		

A5.1.5.1.2.4.5. EPM P49 1 minute interval 4th minute Open Arm Frequency ANOVA

Univariate Tests of Significance for 4. Frequency of entry into open arms (
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	20.0934	1	20.0934	15.9967	0.00019
MS	0.0184	1	0.0184	0.0147	0.90390
Running	1.2341	1	1.2341	0.9825	0.32599
Lesion	0.2357	1	0.2357	0.1876	0.66657
MS*Running	0.0184	1	0.0184	0.0147	0.90390
MS*Lesion	0.4780	1	0.4780	0.3805	0.53987
Running*Lesion	1.4220	1	1.4220	1.1321	0.29205
MS*Running*Lesion	4.4324	1	4.4324	3.5287	0.06571
Error	67.8293	54	1.2561		

A5.1.5.1.2.4.6. EPM P49 1 minute intervals 4th minute Closed Arm Duration ANOVA

Univariate Tests of Significance for 4. Duration in closed arms (s) (EPM P4 Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	98869.3	1	98869.3	785.956	0.00000
MS	143.3(	1	143.3(	1.139	0.29058
Running	33.1	1	33.1	0.263	0.60982
Lesion	23.9(	1	23.9(	0.190(	0.66464
MS*Running	105.0	1	105.0	0.835	0.36480
MS*Lesion	50.1	1	50.1	0.398	0.53030
Running*Lesion	67.5	1	67.5	0.536	0.46699
MS*Running*Lesion	140.7	1	140.7	1.118	0.29487
Error	6792.9	54	125.7		

A5.1.5.1.2.4.7. EPM P49 1 minute intervals 4th minute Central Square Duration ANOVA

Univariate Tests of Significance for 4. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2316.51	1	2316.51	46.8740	0.00000
MS	42.43	1	42.43	0.8586(	0.35823
Running	7.62	1	7.62	0.1543(	0.69600
Lesion	23.85	1	23.85	0.4826	0.49018
MS*Running	24.86	1	24.86	0.5031	0.48117
MS*Lesion	21.42(	1	21.42(	0.4334	0.51310
Running*Lesion	52.98	1	52.98	1.0721	0.30507
MS*Running*Lesion	11.01	1	11.01	0.2229(	0.63874
Error	2668.67	54	49.42(		

A5.1.5.1.2.4.8. EPM P49 1 minute intervals 4th minute Maximum Velocity ANOVA

Univariate Tests of Significance for 4. Maximum velocity (cm/s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	73151.2	1	73151.2	143.018	0.00000
MS	463.7	1	463.7	0.906	0.34522
Running	3.09	1	3.09	0.006(	0.93834
Lesion	5.03	1	5.03	0.009	0.92136
MS*Running	141.7	1	141.7	0.277	0.60072
MS*Lesion	0.66	1	0.66	0.001	0.97148
Running*Lesion	446.2	1	446.2	0.872	0.35444
MS*Running*Lesion	206.0	1	206.0	0.402	0.52832
Error	27619.9	54	511.4		

A5.1.5.1.2.4.9. EPM P49 1 minute intervals 4th minute Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 4. Mean velocity (cm/s) (EPM P49 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	935.692	1	935.692	299.737	0.00000
MS	2.116	1	2.116	0.678	0.41386
Running	12.786	1	12.786	4.096	0.04794
Lesion	0.003	1	0.003	0.001	0.97464
MS*Running	1.367	1	1.367	0.438	0.51087
MS*Lesion	2.815	1	2.815	0.901	0.34654
Running*Lesion	0.136	1	0.136	0.043	0.83489
MS*Running*Lesion	1.472	1	1.472	0.471	0.49517
Error	168.572	54	3.121		

A5.1.5.1.2.4.10. EPM P49 1 minute interval 4th minute Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 4. Mean velocity (cm/s) (EPM P49 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 3.1217, df = 54.000 Running	{1} 4.3628	{2} 3.4461
1	0		0.04704
2	1	0.04704	

A5.1.5.1.2.5.1. EPM P49 1 minute Time-bins 5th interval Descriptive Statistics

	Descriptive Statistics (EPM P49 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	5. Total distance (cm) Mean	5. Total distance (cm) Std.Dev.	5. Total distance (cm) Std.Err	5. Total distance (cm) -95.00%	5. Total distance (cm) +95.00%
Total				62	150.723	80.808	10.2626	130.201	171.244
MS	0			31	139.496	69.538	12.4894	113.989	165.003
MS	1			31	161.950	90.451	16.2456	128.772	195.128
Running	0			28	170.129	75.626	14.2920	140.805	199.454
Running	1			34	134.741	82.512	14.1508	105.951	163.531
Lesion	0			31	166.352	76.326	13.7087	138.356	194.349
Lesion	1			31	135.093	83.348	14.9697	104.521	165.665
MS*Running	0	0		14	160.512	61.710	16.4928	124.881	196.142
MS*Running	0	1		17	122.189	72.579	17.6031	84.872	159.506
MS*Running	1	0		14	179.747	88.719	23.7113	128.522	230.972
MS*Running	1	1		17	147.293	91.867	22.2811	100.059	194.527
MS*Lesion	0	0		16	152.292	65.246	16.3116	117.525	187.060
MS*Lesion	0	1		15	125.847	73.579	18.9981	85.099	166.594
MS*Lesion	1	0		15	181.350	86.346	22.2945	133.533	229.167
MS*Lesion	1	1		16	143.762	93.140	23.2851	94.131	193.393
Running*Lesion	0	0		14	197.391	85.277	22.7912	148.154	246.629
Running*Lesion	0	1		14	142.867	54.823	14.6522	111.213	174.522
Running*Lesion	1	0		17	140.791	58.970	14.3024	110.471	171.111
Running*Lesion	1	1		17	128.691	102.405	24.8370	76.038	181.343
MS*Running*Les	0	0	0	7	173.623	67.095	25.3596	111.571	235.676
MS*Running*Les	0	0	1	7	147.400	57.863	21.8703	93.885	200.915
MS*Running*Les	0	1	0	9	135.702	62.433	20.8112	87.711	183.692
MS*Running*Les	0	1	1	8	106.987	84.184	29.7635	36.607	177.367
MS*Running*Les	1	0	0	7	221.159	99.682	37.6763	128.969	313.350
MS*Running*Les	1	0	1	7	138.335	55.821	21.0987	86.708	189.961
MS*Running*Les	1	1	0	8	146.517	58.506	20.6850	97.604	195.429
MS*Running*Les	1	1	1	9	147.983	117.826	39.2754	57.413	238.552

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Duration in open arms (s) Mean	5. Duration in open arms (s) Std.Dev.	5. Duration in open arms (s) Std.Err	5. Duration in open arms (s) -95.00%	5. Duration in open arms (s) +95.00%
Total				62	1.36676	3.28514	0.41721	0.5325	2.20103
MS	0			31	1.80239	3.89049	0.69875	0.3753	3.22943
MS	1			31	0.93114	2.53296	0.45493	0.0020	1.86024
Running	0			28	1.58072	3.70956	0.70104	0.1423	3.01914
Running	1			34	1.19056	2.93588	0.50349	0.1661	2.21494
Lesion	0			31	1.46354	3.40108	0.61085	0.2160	2.71107
Lesion	1			31	1.26999	3.21827	0.57802	0.0895	2.45046
MS*Running	0	0		14	2.37161	4.65121	1.24309	-0.3139	5.05714
MS*Running	0	1		17	1.33362	3.20708	0.77783	-0.3153	2.98255
MS*Running	1	0		14	0.78983	2.36627	0.63241	-0.5764	2.15608
MS*Running	1	1		17	1.04751	2.72920	0.66193	-0.3557	2.45074
MS*Lesion	0	0		16	1.96057	4.19487	1.04871	-0.2747	4.19587
MS*Lesion	0	1		15	1.63365	3.67711	0.94942	-0.4026	3.66997
MS*Lesion	1	0		15	0.93337	2.31296	0.59720	-0.3475	2.21425
MS*Lesion	1	1		16	0.92905	2.79975	0.69993	-0.5628	2.42094
Running*Lesion	0	0		14	2.60193	4.78003	1.27751	-0.1579	5.36184
Running*Lesion	0	1		14	0.55951	1.86692	0.49895	-0.5184	1.63745
Running*Lesion	1	0		17	0.52604	1.02783	0.24928	-0.0024	1.05451
Running*Lesion	1	1		17	1.85509	3.97274	0.96353	-0.1875	3.89768
MS*Running*Les	0	0	0	7	3.74324	5.95681	2.25146	-1.7658	9.25237
MS*Running*Les	0	0	1	7	0.99998	2.64572	0.99998	-1.4468	3.44687
MS*Running*Les	0	1	0	9	0.57406	1.19925	0.39975	-0.3477	1.49589
MS*Running*Les	0	1	1	8	2.18812	4.50439	1.59254	-1.5776	5.95389
MS*Running*Les	1	0	0	7	1.46062	3.31399	1.25257	-1.6043	4.52556
MS*Running*Les	1	0	1	7	0.11904	0.31497	0.11904	-0.1722	0.41034
MS*Running*Les	1	1	0	8	0.47202	0.87451	0.30918	-0.2590	1.20313
MS*Running*Les	1	1	1	9	1.55906	3.68814	1.22938	-1.2759	4.39402

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Frequency of entry into open arms Mean	5. Frequency of entry into open arms Std.Dev.	5. Frequency of entry into open arms Std.Err	5. Frequency of entry into open arms -95.00%	5. Frequency of entry into open arms +95.00%
Total				62	0.43548	0.89846	0.11410	0.20731	0.66365
MS	0			31	0.58064	1.08855	0.19551	0.18136	0.97992
MS	1			31	0.29032	0.64257	0.11541	0.05462	0.52602
Running	0			28	0.46428	0.99933	0.18885	0.07678	0.85178
Running	1			34	0.41176	0.82085	0.14077	0.12535	0.69817
Lesion	0			31	0.45161	0.85004	0.15267	0.13981	0.76341
Lesion	1			31	0.41935	0.95826	0.17211	0.06785	0.77085
MS*Running	0	0		14	0.71428	1.32598	0.35438	-0.05131	1.47988
MS*Running	0	1		17	0.47058	0.87447	0.21209	0.02097	0.92020
MS*Running	1	0		14	0.21428	0.42581	0.11380	-0.03157	0.46014
MS*Running	1	1		17	0.35294	0.78590	0.19061	-0.05113	0.75701
MS*Lesion	0	0		16	0.50000	0.89442	0.22360	0.02339	0.97660
MS*Lesion	0	1		15	0.66666	1.29099	0.33333	-0.04826	1.38159
MS*Lesion	1	0		15	0.40000	0.82807	0.21380	-0.05857	0.85857
MS*Lesion	1	1		16	0.18750	0.40311	0.10077	-0.02730	0.40230
Running*Lesion	0	0		14	0.57142	0.93761	0.25058	0.03006	1.11279
Running*Lesion	0	1		14	0.35714	1.08181	0.28912	-0.26748	0.98176
Running*Lesion	1	0		17	0.35294	0.78590	0.19061	-0.05113	0.75701
Running*Lesion	1	1		17	0.47058	0.87447	0.21209	0.02097	0.92020
MS*Running*Les	0	0	0	7	0.85714	1.21498	0.45922	-0.26653	1.98081
MS*Running*Les	0	0	1	7	0.57142	1.51185	0.57142	-0.82680	1.96966
MS*Running*Les	0	1	0	9	0.22222	0.44095	0.14698	-0.11672	0.56117
MS*Running*Les	0	1	1	8	0.75000	1.16496	0.41187	-0.22393	1.72393
MS*Running*Les	1	0	0	7	0.28571	0.48795	0.18442	-0.16556	0.73699
MS*Running*Les	1	0	1	7	0.14285	0.37796	0.14285	-0.20670	0.49241
MS*Running*Les	1	1	0	8	0.50000	1.06904	0.37796	-0.39374	1.39374
MS*Running*Les	1	1	1	9	0.22222	0.44095	0.14698	-0.11672	0.56117

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Duration in closed arms (s) Mean	5. Duration in closed arms (s) Std.Dev.	5. Duration in closed arms (s) Std.Err	5. Duration in closed arms (s) -95.00%	5. Duration in closed arms (s) +95.00%
Total				62	42.7420	9.1163	1.15777	40.4269	45.0571
MS	0			31	41.4985	11.3616	2.04061	37.3310	45.6660
MS	1			31	43.9855	6.0583	1.08810	41.7633	46.2077
Running	0			28	43.1192	8.0787	1.52673	39.9866	46.2518
Running	1			34	42.4314	10.0002	1.71502	38.9421	45.9206
Lesion	0			31	42.6692	7.7129	1.38528	39.8401	45.4983
Lesion	1			31	42.8148	10.4635	1.87930	38.9767	46.6529
MS*Running	0	0		14	42.2198	10.2375	2.73608	36.3089	48.1308
MS*Running	0	1		17	40.9045	12.4921	3.02979	34.4816	47.3273
MS*Running	1	0		14	44.0185	5.3855	1.43934	40.9090	47.1281
MS*Running	1	1		17	43.9583	6.7268	1.63150	40.4997	47.4169
MS*Lesion	0	0		16	42.7095	9.3061	2.32653	37.7506	47.6684
MS*Lesion	0	1		15	40.2068	13.4298	3.46758	32.7696	47.6440
MS*Lesion	1	0		15	42.6263	5.8892	1.52059	39.3649	45.8876
MS*Lesion	1	1		16	45.2598	6.1201	1.53002	41.9986	48.5210
Running*Lesion	0	0		14	40.9884	9.5700	2.55771	35.4628	46.5140
Running*Lesion	0	1		14	45.2500	5.8469	1.56266	41.8740	48.6259
Running*Lesion	1	0		17	44.0534	5.7114	1.38523	41.1169	46.9900
Running*Lesion	1	1		17	40.8094	12.9633	3.14406	34.1442	47.4745
MS*Running*Lesi	0	0	0	7	40.0587	12.8549	4.85872	28.1699	51.9476
MS*Running*Lesi	0	0	1	7	44.3809	7.1366	2.69741	37.7806	50.9812
MS*Running*Lesi	0	1	0	9	44.7712	5.2455	1.74850	40.7391	48.8032
MS*Running*Lesi	0	1	1	8	36.5544	16.8641	5.96237	22.4557	50.6532
MS*Running*Lesi	1	0	0	7	41.9181	5.5830	2.11019	36.7546	47.0815
MS*Running*Lesi	1	0	1	7	46.1190	4.6235	1.74752	41.8430	50.3950
MS*Running*Lesi	1	1	0	8	43.2459	6.4581	2.28330	37.8468	48.6451
MS*Running*Lesi	1	1	1	9	44.5915	7.2834	2.42780	38.9930	50.1900

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Duration in centra square (s)	5. Duration in centra square (s)	5. Duration in centra square (s)	5. Duration in centra square (s)	5. Duration in centra square (s)
Total				62	4.8911	7.6877	0.9763	2.9388	6.8435
MS	0			31	5.6990	9.7449	1.7502	2.1245	9.2735
MS	1			31	4.0833	4.8845	0.8772	2.2916	5.8749
Running	0			28	4.3000	5.4761	1.0349	2.1766	6.4234
Running	1			34	5.3780	9.1744	1.5734	2.1768	8.5791
Lesion	0			31	4.8671	5.6008	1.0059	2.8127	6.9216
Lesion	1			31	4.9151	9.4234	1.6924	1.4586	8.3717
MS*Running	0	0		14	4.4085	6.3305	1.6918	0.7533	8.0636
MS*Running	0	1		17	6.7618	11.9515	2.8986	0.6169	12.9067
MS*Running	1	0		14	4.1915	4.7099	1.2587	1.4721	6.9110
MS*Running	1	1		17	3.9941	5.1665	1.2530	1.3377	6.6505
MS*Lesion	0	0		16	4.3298	5.9592	1.4898	1.1544	7.5053
MS*Lesion	0	1		15	7.1594	12.6892	3.2763	0.1324	14.1865
MS*Lesion	1	0		15	5.4403	5.3375	1.3781	2.4844	8.3961
MS*Lesion	1	1		16	2.8111	4.1904	1.0476	0.5781	5.0440
Running*Lesion	0	0		14	5.4096	6.0238	1.6099	1.9315	8.8876
Running*Lesion	0	1		14	3.1904	4.8317	1.2913	0.4007	5.9802
Running*Lesion	1	0		17	4.4205	5.3727	1.3030	1.6581	7.1828
Running*Lesion	1	1		17	6.3355	11.9493	2.8981	0.1917	12.4793
MS*Running*Les	0	0	0	7	5.1979	7.4534	2.8171	-1.6953	12.0912
MS*Running*Les	0	0	1	7	3.6190	5.4609	2.0640	-1.4314	8.6695
MS*Running*Les	0	1	0	9	3.6547	4.8733	1.6244	-0.0912	7.4006
MS*Running*Les	0	1	1	8	10.2573	16.5218	5.8413	-3.5552	24.0699
MS*Running*Les	1	0	0	7	5.6212	4.7919	1.8111	1.1894	10.0530
MS*Running*Les	1	0	1	7	2.7619	4.5091	1.7042	-1.4083	6.9321
MS*Running*Les	1	1	0	8	5.2820	6.1020	2.1574	0.1805	10.3834
MS*Running*Les	1	1	1	9	2.8493	4.2038	1.4012	-0.3820	6.0807

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Maximum velocity (cm/s) Mean	5. Maximum velocity (cm/s) Std.Dev.	5. Maximum velocity (cm/s) Std.Err	5. Maximum velocity (cm/s) -95.00%	5. Maximum velocity (cm/s) +95.00%
Total				62	28.2764	12.9160	1.64033	24.9963	31.5564
MS	0			31	27.4104	11.4878	2.06326	23.1967	31.6242
MS	1			31	29.1423	14.3418	2.57586	23.8817	34.4029
Running	0			28	30.2043	11.8826	2.24561	25.5967	34.8120
Running	1			34	26.6886	13.6781	2.34579	21.9161	31.4612
Lesion	0			31	31.0992	12.3964	2.22647	26.5521	35.6463
Lesion	1			31	25.4535	13.0025	2.33532	20.6842	30.2229
MS*Running	0	0		14	28.9962	8.2119	2.19473	24.2548	33.7376
MS*Running	0	1		17	26.1045	13.7345	3.33112	19.0428	33.1661
MS*Running	1	0		14	31.4125	14.9224	3.98818	22.7965	40.0284
MS*Running	1	1		17	27.2728	14.0184	3.39996	20.0652	34.4804
MS*Lesion	0	0		16	30.1420	10.2367	2.55919	24.6872	35.5968
MS*Lesion	0	1		15	24.4967	12.3649	3.19261	17.6492	31.3442
MS*Lesion	1	0		15	32.1202	14.6580	3.78469	24.0028	40.2376
MS*Lesion	1	1		16	26.3505	13.9161	3.47904	18.9351	33.7659
Running*Lesion	0	0		14	34.4412	13.2252	3.53459	26.8052	42.0773
Running*Lesion	0	1		14	25.9674	8.9267	2.38576	20.8133	31.1215
Running*Lesion	1	0		17	28.3469	11.3226	2.74615	22.5253	34.1685
Running*Lesion	1	1		17	25.0303	15.8692	3.84885	16.8711	33.1895
MS*Running*Les	0	0	0	7	32.3901	9.6426	3.64459	23.4721	41.3080
MS*Running*Les	0	0	1	7	25.6023	5.1238	1.93664	20.8635	30.3411
MS*Running*Les	0	1	0	9	28.3935	10.9035	3.63449	20.0124	36.7747
MS*Running*Les	0	1	1	8	23.5293	16.7627	5.92651	9.5153	37.5433
MS*Running*Les	1	0	0	7	36.4924	16.6182	6.28111	21.1231	51.8618
MS*Running*Les	1	0	1	7	26.3325	12.0867	4.56834	15.1541	37.5108
MS*Running*Les	1	1	0	8	28.2945	12.5363	4.43225	17.8139	38.7751
MS*Running*Les	1	1	1	9	26.3646	15.9230	5.30769	14.1250	38.6041

Effect	Descriptive Statistics (EPM P49 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	5. Mean velocity (cm/s) Mean	5. Mean velocity (cm/s) Std.Dev.	5. Mean velocity (cm/s) Std.Err	5. Mean velocity (cm/s) -95.00%	5. Mean velocity (cm/s) +95.00%
Total				62	3.09494	1.67460	0.21267	2.66967	3.52021
MS	0			31	2.86257	1.43275	0.25733	2.33703	3.38811
MS	1			31	3.32732	1.88087	0.33781	2.63741	4.01723
Running	0			28	3.49183	1.56480	0.29572	2.88506	4.09859
Running	1			34	2.76810	1.71364	0.29388	2.17018	3.36602
Lesion	0			31	3.41519	1.58282	0.28428	2.83460	3.99577
Lesion	1			31	2.77470	1.72766	0.31029	2.14099	3.40841
MS*Running	0	0		14	3.29292	1.27017	0.33946	2.55954	4.02630
MS*Running	0	1		17	2.50816	1.49753	0.36320	1.73819	3.27812
MS*Running	1	0		14	3.69073	1.84038	0.49186	2.62812	4.75334
MS*Running	1	1		17	3.02804	1.91585	0.46466	2.04300	4.01309
MS*Lesion	0	0		16	3.12448	1.34672	0.33668	2.40686	3.84210
MS*Lesion	0	1		15	2.58320	1.51446	0.39103	1.74452	3.42188
MS*Lesion	1	0		15	3.72527	1.79603	0.46373	2.73066	4.71988
MS*Lesion	1	1		16	2.95424	1.93852	0.48463	1.92127	3.98721
Running*Lesion	0	0		14	4.06062	1.77276	0.47379	3.03706	5.08418
Running*Lesion	0	1		14	2.92303	1.11628	0.29834	2.27851	3.56756
Running*Lesion	1	0		17	2.88365	1.21629	0.29499	2.25829	3.50902
Running*Lesion	1	1		17	2.65255	2.13283	0.51728	1.55595	3.74915
MS*Running*Les	0	0	0	7	3.56919	1.38767	0.52449	2.28580	4.85258
MS*Running*Les	0	0	1	7	3.01665	1.17977	0.44591	1.92555	4.10776
MS*Running*Les	0	1	0	9	2.77859	1.28404	0.42801	1.79159	3.76559
MS*Running*Les	0	1	1	8	2.20392	1.74410	0.61663	0.74582	3.66203
MS*Running*Les	1	0	0	7	4.55204	2.07845	0.78558	2.62979	6.47430
MS*Running*Les	1	0	1	7	2.82941	1.13470	0.42887	1.77998	3.87884
MS*Running*Les	1	1	0	8	3.00185	1.21119	0.42822	1.98927	4.01443
MS*Running*Les	1	1	1	9	3.05133	2.46091	0.82030	1.15970	4.94296

A5.1.5.1.2.5.2. EPM P49 1 minute intervals 5th interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 5. Total distance (cm) (EPM P49 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	142079	1	142079	224.840	0.00000
MS	781(	1	781(	1.235	0.27118
Running	1968	1	1968	3.115(	0.08323
Lesion	1780(	1	1780(	2.816	0.09906
MS*Running	171	1	171	0.027(	0.87012
MS*Lesion	669	1	669	0.105	0.74617
Running*Lesion	6411	1	6411	1.014	0.31830
MS*Running*Lesion	721	1	721	1.142(	0.28999
Error	34123	54	631		

A5.1.5.1.2.5.3. EPM P49 1 minute intervals 5th interval Open Arm Duration ANOVA

Effect	Univariate Tests of Significance for 5. Duration in open arms (s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	118.401	1	118.401	10.8533	0.00174
MS	14.533	1	14.533	1.3322	0.25348
Running	2.241	1	2.241	0.2055	0.65213
Lesion	1.834	1	1.834	0.1681	0.68336
MS*Running	5.669	1	5.669	0.5196	0.47408
MS*Lesion	0.733	1	0.733	0.0671	0.79645
Running*Lesion	44.122	1	44.122	4.0445	0.04931
MS*Running*Lesion	3.564	1	3.564	0.3267	0.56996
Error	589.097	54	10.909		

A5.1.5.1.2.5.4. EPM P49 1 minute intervals 5th interval Open Arm Duration post hoc Newman Keuls test (Running*Lesion)

Cell No.	Newman-Keuls test; variable 5. Duration in open arms (s) (EPM P49 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 10.909, df = 54.000 Running	Lesion	{1} 2.6019	{2} .55952	{3} .52605	{4} 1.8551
1	0	0		0.20959	0.31284	0.53373
2	0	1	0.20959		0.97780	0.28202
3	1	0	0.31284	0.97780		0.50921
4	1	1	0.53373	0.28202	0.50921	

A5.1.5.1.2.5.5. EPM P49 1 minute intervals 5th interval Open Arm Frequency ANOVA

Effect	Univariate Tests of Significance for 5. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	12.0862	1	12.0862	14.3540	0.00038
MS	1.4971	1	1.4971	1.7780	0.18798
Running	0.0253	1	0.0253	0.0301	0.86286
Lesion	0.0305	1	0.0305	0.0362	0.84963
MS*Running	0.5389	1	0.5389	0.6401	0.42717
MS*Lesion	0.4208	1	0.4208	0.4997	0.48264
Running*Lesion	0.4412	1	0.4412	0.5239	0.47227
MS*Running*Lesion	0.8618	1	0.8618	1.0235	0.31618
Error	45.4682	54	0.8420		

A5.1.5.1.2.5.6. EPM P49 1 minute intervals 5th interval Closed Arm Duration ANOVA

Effect	Univariate Tests of Significance for 5. Duration in closed arms (s) (EPM P4 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	111836.3	1	111836.3	1330.317	0.000000
MS	97.9	1	97.9	1.165	0.285268
Running	10.5	1	10.5	0.125	0.724885
Lesion	2.6	1	2.6	0.031	0.860665
MS*Running	8.1	1	8.1	0.097	0.756893
MS*Lesion	85.4	1	85.4	1.016	0.317985
Running*Lesion	227.1	1	227.1	2.701	0.106093
MS*Running*Lesion	89.8	1	89.8	1.069	0.305825
Error	4539.6	54	84.1		

A5.1.5.1.2.5.7. EPM P49 1 minute intervals 5th interval Central Square Duration ANOVA

Effect	Univariate Tests of Significance for 5. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1475.657	1	1475.657	24.33255	0.000005
MS	37.006	1	37.006	0.61020	0.438124
Running	22.477	1	22.477	0.37062	0.545217
Lesion	0.069	1	0.069	0.00114	0.973225
MS*Running	27.393	1	27.393	0.45169	0.504397
MS*Lesion	101.963	1	101.963	1.68131	0.200265
Running*Lesion	71.004	1	71.004	1.17082	0.284043
MS*Running*Lesion	57.623	1	57.623	0.95016	0.334025
Error	3274.835	54	60.645		

A5.1.5.1.2.5.8. EPM P49 1 minute intervals 5th interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 5. Maximum velocity (cm/s) (EPM P49 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	49547.70	1	49547.70	287.8383	0.000000
MS	54.89	1	54.89	0.3189	0.574623
Running	194.17	1	194.17	1.1280	0.292925
Lesion	540.10	1	540.10	3.1376	0.082145
MS*Running	4.21	1	4.21	0.0245	0.876302
MS*Lesion	0.18	1	0.18	0.0011	0.974054
Running*Lesion	98.78	1	98.78	0.5739	0.452025
MS*Running*Lesion	38.11	1	38.11	0.2214	0.639883
Error	9295.43	54	172.14		

A5.1.5.1.2.5.9. EPM P49 1 minute intervals 5th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 5. Mean velocity (cm/s) (EPM P49 1 m Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	599.004	1	599.004	220.415	0.00000
MS	3.3373	1	3.3373	1.228(	0.27270
Running	8.2349	1	8.2349	3.0302	0.08742
Lesion	7.5140	1	7.5140	2.7649	0.10214
MS*Running	0.0725	1	0.0725	0.0267	0.87087
MS*Lesion	0.2856	1	0.2856	0.1051	0.74705
Running*Lesion	2.9343	1	2.9343	1.0797	0.30338
MS*Running*Lesion	3.0846	1	3.0846	1.1351	0.29144
Error	146.751	54	2.7176		

A5.1.5.1.2.6.1. EPM P49 1 minute intervals Distance Travelled repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	2398435	1	2398435	1525.50(	0.00000(
MS	30777	1	30777	1.958	0.16749[
Running	202413	1	202413	12.874	0.00071[
Lesion	3113	1	3113	0.198	0.65811[
MS*Running	2336	1	2336	0.149	0.70141[
MS*Lesion	901	1	901	0.057	0.81168[
Running*Lesion	4033	1	4033	0.256	0.61460[
MS*Running*Lesion	24451	1	24451	1.555	0.21775[
Error	849004	54	15722		
TIME	327586[	4	818967	192.87[	0.00000(
TIME*MS	1290	4	323	0.076	0.98948[
TIME*Running	7478	4	1869	0.44(	0.77941(
TIME*Lesion	26481	4	6620	1.559	0.18634(
TIME*MS*Running	17107	4	4277	1.007	0.40461[
TIME*MS*Lesion	7960	4	1990	0.469	0.75870[
TIME*Running*Lesion	4856	4	1214	0.286	0.88690[
TIME*MS*Running*Lesion	1714	4	428	0.101	0.98206[
Error	917142	216	4246		

A5.1.5.1.2.6.2. EPM P49 1 minute intervals Distance Travelled repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 4246.0, df = 216.00					
	TIME	{1} 422.61	{2} 365.53	{3} 260.19	{4} 188.10	{5} 150.72
1	1. Total distance (cm		0.00001(	0.00002[	0.00000[	0.00001[
2	2. Total distance (cm	0.00001(		0.00000[	0.00002[	0.00000[
3	3. Total distance (cm	0.00002[	0.00000[		0.00000[	0.00002[
4	4. Total distance (cm	0.00000[	0.00002[	0.00000[		0.00140[
5	5. Total distance (cm	0.00001[	0.00000[	0.00002[	0.00140[	

A5.1.5.1.2.6.3. EPM P49 1 minute intervals Open Arm Duration repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	12949.16	1	12949.16	161.345(	0.00000(
MS	12.19	1	12.19	0.1519	0.698217
Running	65.33	1	65.33	0.814(	0.370951
Lesion	30.87	1	30.87	0.3847	0.537709
MS*Running	3.60	1	3.60	0.0448	0.833089
MS*Lesion	25.86	1	25.86	0.3223	0.572607
Running*Lesion	2.37	1	2.37	0.0296	0.864101
MS*Running*Lesion	8.99	1	8.99	0.112(	0.739136
Error	4333.91	54	80.26		
TIME	6798.43	4	1699.61	55.5627	0.00000(
TIME*MS	47.21	4	11.80	0.3858	0.81864(
TIME*Running	56.63	4	14.16	0.4628	0.762994
TIME*Lesion	75.09	4	18.77	0.6137	0.653228
TIME*MS*Running	84.08	4	21.02	0.6871	0.601562
TIME*MS*Lesion	16.71	4	4.18	0.1365	0.968665
TIME*Running*Lesion	52.07	4	13.02	0.4256	0.790072
TIME*MS*Running*Lesion	199.03	4	49.76	1.6267	0.168604
Error	6607.23	216	30.59		

A5.1.5.1.2.6.4. EPM P49 1 minute intervals Open Arm Duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 30.589, df = 216.00					
	TIME	{1} 14.613	{2} 8.3546	{3} 5.2273	{4} 2.6888	{5} 1.3668
1	1. Duration in open arms (s		0.000009	0.000022	0.000008	0.000017
2	2. Duration in open arms (s	0.000009		0.001647	0.000022	0.000008
3	3. Duration in open arms (s	0.000022	0.001647		0.010617	0.000315
4	4. Duration in open arms (s	0.000008	0.000022	0.010617		0.18322(
5	5. Duration in open arms (s	0.000017	0.000008	0.000315	0.18322(	

A5.1.5.1.2.6.5. EPM P49 1 minute intervals Open Arm Frequency repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	635.737(	1	635.737(	209.498(	0.00000(
MS	0.0062	1	0.0062	0.0021	0.963977
Running	1.1064	1	1.1064	0.364(	0.548497
Lesion	0.2835	1	0.2835	0.0934	0.76105(
MS*Running	0.0062	1	0.0062	0.0021	0.963977
MS*Lesion	3.0814	1	3.0814	1.0154	0.318101
Running*Lesion	0.0797	1	0.0797	0.0263	0.871874
MS*Running*Lesion	0.5567	1	0.5567	0.1834	0.670134
Error	163.8671	54	3.0346		
TIME	273.320(	4	68.330(	47.576(	0.00000(
TIME*MS	6.4993	4	1.6248	1.1313	0.342642
TIME*Running	4.3998	4	1.100(	0.765(	0.548499
TIME*Lesion	13.1335	4	3.2834	2.2861	0.061162
TIME*MS*Running	2.5678	4	0.6419	0.447(	0.774545
TIME*MS*Lesion	0.1358	4	0.034(	0.023(	0.998907
TIME*Running*Lesion	4.5845	4	1.1461	0.798(	0.527629
TIME*MS*Running*Lesion	5.8316	4	1.4579	1.0151	0.400447
Error	310.2222	216	1.4362		

A5.1.5.1.2.6.6. EPM P49 1 minute intervals Open Arm Frequency repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 1.4362, df = 216.00					
	TIME	{1} 2.9194	{2} 2.1129	{3} 1.1290	{4} .56452	{5} .43548
1	1. Frequency of entry into open arr		0.000186	0.000022	0.000008	0.000017
2	2. Frequency of entry into open arr	0.000186		0.000013	0.000022	0.000008
3	3. Frequency of entry into open arr	0.000022	0.000013		0.008737	0.003649
4	4. Frequency of entry into open arr	0.000008	0.000022	0.008737		0.548862
5	5. Frequency of entry into open arr	0.000017	0.000008	0.003649	0.548862	

A5.1.5.1.2.6.7. EPM P49 1 minute intervals Closed Arm Duration repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	395593.5	1	395593.5	2021.31	0.00000
MS	136.6	1	136.6	0.698	0.40717
Running	0.5	1	0.5	0.002	0.96081
Lesion	7.4	1	7.4	0.038	0.84620
MS*Running	3.0	1	3.0	0.015	0.90190
MS*Lesion	92.2	1	92.2	0.471	0.49550
Running*Lesion	53.1	1	53.1	0.271	0.60474
MS*Running*Lesion	23.4	1	23.4	0.120	0.73071
Error	10568.4	54	195.7		
TIME	8983.9	4	2246.0	37.707	0.00000
TIME*MS	128.3	4	32.1	0.539	0.70752
TIME*Running	218.2	4	54.5	0.916	0.45564
TIME*Lesion	31.7	4	7.9	0.133	0.97019
TIME*MS*Running	125.6	4	31.4	0.527	0.71597
TIME*MS*Lesion	63.1	4	15.8	0.265	0.90041
TIME*Running*Lesion	281.1	4	70.3	1.180	0.32061
TIME*MS*Running*Lesion	290.1	4	72.5	1.218	0.30420
Error	12865.9	216	59.6		

A5.1.5.1.2.6.8. EPM P49 1 minute intervals Closed Arm Duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 59.565, df = 216.00					
	TIME	{1} 27.746	{2} 31.841	{3} 37.126	{4} 40.205	{5} 42.742
1	1. Duration in closed arms (s		0.00314	0.00002	0.00000	0.00001
2	2. Duration in closed arms (s	0.00314		0.00014	0.00002	0.00000
3	3. Duration in closed arms (s	0.00002	0.00014		0.02634	0.00016
4	4. Duration in closed arms (s	0.00000	0.00002	0.02634		0.06715
5	5. Duration in closed arms (s	0.00001	0.00000	0.00016	0.06715	

A5.1.5.1.2.6.9. EPM P49 1 minute intervals Central Square Duration repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	13283.85	1	13283.85	277.912	0.00000(
MS	67.16	1	67.16	1.405(	0.24107(
Running	54.65	1	54.65	1.143(	0.28968(
Lesion	8.02	1	8.02	0.167(	0.68368(
MS*Running	0.03	1	0.03	0.000(	0.98109(
MS*Lesion	20.38	1	20.38	0.426(	0.51652(
Running*Lesion	32.92	1	32.92	0.688(	0.41022(
MS*Running*Lesion	3.39	1	3.39	0.070(	0.79099(
Error	2581.13	54	47.80		
TIME	464.97	4	116.24	3.934(	0.00419(
TIME*MS	30.70	4	7.68	0.259(	0.90344(
TIME*Running	85.39	4	21.35	0.722(	0.57743(
TIME*Lesion	68.26	4	17.07	0.577(	0.67921(
TIME*MS*Running	105.82	4	26.46	0.895(	0.46755(
TIME*MS*Lesion	114.55	4	28.64	0.969(	0.42528(
TIME*Running*Lesion	139.57	4	34.89	1.180(	0.32013(
TIME*MS*Running*Lesion	155.61	4	38.90	1.316(	0.26478(
Error	6382.36	216	29.55		

A5.1.5.1.2.6.10. EPM P49 1 minute Central Square Duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 29.548, df = 216.00					
	TIME	{1} 6.6405	{2} 8.8047	{3} 6.6471	{4} 6.1067	{5} 4.8912
1	1. Duration in central square (		0.06837(	0.99464(	0.58450(	0.17230(
2	2. Duration in central square (	0.06837(		0.02711(	0.02921(	0.00059(
3	3. Duration in central square (	0.99464(	0.02711(		0.84466(	0.27398(
4	4. Duration in central square (	0.58450(	0.02921(	0.84466(		0.21314(
5	5. Duration in central square (	0.17230(	0.00059(	0.27398(	0.21314(	

A5.1.5.1.2.6.11. EPM P49 1 minute intervals Maximum Velocity Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	490476.2	1	490476.2	842.900(	0.00000(
MS	684.7	1	684.7	1.1767	0.28285(
Running	581.4	1	581.4	0.9991	0.321993
Lesion	168.9	1	168.9	0.2902	0.592286
MS*Running	107.0	1	107.0	0.1839	0.669728
MS*Lesion	51.4	1	51.4	0.0883	0.767536
Running*Lesion	441.3	1	441.3	0.7584	0.387693
MS*Running*Lesion	367.2	1	367.2	0.6311	0.430423
Error	31422.1	54	581.9		
TIME	19265.5	4	4816.4	37.3581	0.00000(
TIME*MS	255.5	4	63.9	0.4955	0.739065
TIME*Running	204.0	4	51.0	0.3955	0.811752
TIME*Lesion	498.3	4	124.6	0.9663	0.426844
TIME*MS*Running	297.0	4	74.2	0.5759	0.680425
TIME*MS*Lesion	191.6	4	47.9	0.3715	0.828843
TIME*Running*Lesion	194.2	4	48.6	0.3766	0.825209
TIME*MS*Running*Lesion	166.9	4	41.7	0.3237	0.861915
Error	27847.7	216	128.9		

A5.1.5.1.2.6.12. EPM P49 1 minute intervals Maximum velocity repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 128.92, df = 216.00					
	TIME	{1} 49.530	{2} 47.393	{3} 39.600	{4} 34.622	{5} 28.276
1	1. Maximum velocity (cm/		0.294684	0.000025	0.000008	0.000017
2	2. Maximum velocity (cm/	0.294684		0.000140	0.000022	0.000008
3	3. Maximum velocity (cm/	0.000025	0.000140		0.014670	0.000022
4	4. Maximum velocity (cm/	0.000008	0.000022	0.014670		0.001864
5	5. Maximum velocity (cm/	0.000017	0.000008	0.000022	0.001864	

A5.1.5.1.2.6.13. EPM P49 1 minute intervals Mean Velocity repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P49 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	10081.92	1	10081.92	1475.407	0.000000
MS	12.99	1	12.99	1.902	0.173592
Running	85.11	1	85.11	12.456	0.000860
Lesion	1.34	1	1.34	0.196	0.659517
MS*Running	1.00	1	1.00	0.146	0.703774
MS*Lesion	0.36	1	0.36	0.053	0.818501
Running*Lesion	2.21	1	2.21	0.324	0.571723
MS*Running*Lesion	10.29	1	10.29	1.506	0.225132
Error	369.00	54	6.83		
TIME	1372.61	4	343.15	193.721	0.000000
TIME*MS	0.52	4	0.13	0.073	0.990250
TIME*Running	3.20	4	0.80	0.451	0.771420
TIME*Lesion	11.20	4	2.80	1.581	0.180453
TIME*MS*Running	7.18	4	1.80	1.013	0.401379
TIME*MS*Lesion	3.36	4	0.84	0.474	0.754959
TIME*Running*Lesion	2.03	4	0.51	0.287	0.886539
TIME*MS*Running*Lesion	0.73	4	0.18	0.103	0.981502
Error	382.62	216	1.77		

A5.1.5.1.2.6.14. EPM P49 1 minute intervals Mean Velocity repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P49 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 1.7714, df = 216.00					
	TIME	{1} 8.6601	{2} 7.4909	{3} 5.3341	{4} 3.8601	{5} 3.0949
1	1. Mean velocity (cm/s		0.000010	0.000022	0.000008	0.000017
2	2. Mean velocity (cm/s	0.000010		0.000009	0.000022	0.000008
3	3. Mean velocity (cm/s	0.000022	0.000009		0.000009	0.000022
4	4. Mean velocity (cm/s	0.000008	0.000022	0.000009		0.001375
5	5. Mean velocity (cm/s	0.000017	0.000008	0.000022	0.001375	

A5.1.5.2.1.1. EPM P63 Full Five Minutes Data Spreadsheet

	1 MS	2 Running	3 Lesion	4 Total distance (cm)	5 Arena Duration (s)	6 Duration in open arms (s)	7 Frequency o entry into open arms	8 Duration in closed arms (s)
227	0	0	1	412.589	247.333	0	0	244.833
129	1	1	1	1147.96	247.333	9.83332	2	157.499
207	0	1	1	661.648	247.333	0	0	232.999
164	1	1	0	931.76	247.333	37.4999	10	181.333
141	1	0	1	908.149	247.333	0	0	243.499
174	0	1	0	1047.46	247.333	71.4999	9	139.499
148	1	0	0	713.931	247.333	21.6666	5	162.333
176	0	0	0	881.968	247.333	38.1666	7	125.833
154	1	0	1	898.930	247.333	4.83333	3	201.499
122	1	1	0	1156.74	247.333	22.9999	6	191.499
197	1	0	0	1217.14	247.333	36.4999	6	183.333
222	0	1	0	685.379	247.333	0.5	2	232.666
193	0	0	1	988.068	247.333	5.83333	4	177.833
203	0	1	1	932.318	247.333	12.8333	2	207.999
167	0	0	0	1347.24	247.333	17.4999	4	195.666
182	1	1	1	656.653	247.333	15.6666	3	213.333
209	1	0	1	1135.64	247.333	9.83333	5	193.999
216	1	1	0	701.717	247.333	7.66666	2	171.666
144	1	0	0	902.845	247.333	6.49999	5	220.499
234	0	0	1	804.341	247.333	11.3333	3	158.666
169	0	0	0	882.239	247.333	13.3333	5	144.999
117	0	0	1	1116.79	247.333	37.1666	5	139.833
188	0	1	1	741.985	247.333	3.49999	4	144.666
160	0	0	0	1057.27	247.333	11.1666	3	214.499
157	1	0	1	908.688	247.333	3.66666	2	218.833
191	0	1	1	1006.74	247.333	3.33333	1	232.166
220	1	1	1	662.277	247.333	0	0	243.999
138	1	1	0	952.896	247.333	1.33333	2	237.333
186	1	0	0	1386.6	243.999	1.16666	2	226.833
131	0	1	0	969.021	247.333	7.49999	1	234.499
126	0	0	1	999.282	247.333	9.33332	6	225.833
196	1	1	0	976.464	247.333	9.49999	2	215.666
139	1	0	0	948.344	247.333	22.1666	9	90.8332
198	1	1	1	1029.65	247.333	2.33333	2	163.833
143	1	0	1	874.308	247.333	1.66666	1	173.166
145	1	1	1	978.858	247.333	0	0	235.833
190	1	0	0	1138.14	247.333	6.66666	1	117.833
232	0	1	0	541.757	247.333	5.83333	5	67.8333
210	0	1	1	1091.14	247.333	14.4999	7	207.999
137	0	1	1	596.53	247.333	0.33333	1	144.166
171	0	0	0	473.009	247.333	0	0	235.666
219	0	0	0	609.988	247.333	0	0	157.833
205	0	0	1	825.170	247.333	1.33333	1	233.666
250	1	0	0	1095.33	247.333	13	4	202.833
271	1	1	0	1274.9403	247.33323	0	0	238.83324

	1 MS	2 Running	3 Lesion	4 Duration in central square (s)	5 Maximum velocity (cm/s)	6 Mean velocity (cm/s)
227	0	0	1	2.49999	24.2176	1.66927
129	1	1	1	79.99996	36.1639	4.64450
207	0	1	1	14.33332	32.9136	2.67693
164	1	1	0	28.49998	27.8882	3.76976
141	1	0	1	3.83333	38.7796	3.67424
174	0	1	0	36.33331	39.4718	4.23788
148	1	0	0	63.33330	30.9252	2.88846
176	0	0	0	83.333	41.2780	3.56831
154	1	0	1	40.99998	38.5487	3.63694
122	1	1	0	32.83332	51.6197	4.68000
197	1	0	0	27.49998	36.0715	4.92437
222	0	1	0	14.1666	39.1850	2.77294
193	0	0	1	63.66663	34.0968	3.99758
203	0	1	1	26.4999	34.8057	3.77202
167	0	0	0	34.16664	45.990	5.45075
182	1	1	1	18.33332	33.2011	2.65672
209	1	0	1	43.4999	38.0386	4.59465
216	1	1	0	67.99997	41.007	2.83904
144	1	0	0	20.33332	44.8053	3.65278
234	0	0	1	77.33330	42.1916	3.25424
169	0	0	0	88.99996	42.9562	3.56941
117	0	0	1	70.33330	55.0431	4.51837
188	0	1	1	99.16662	35.5903	3.00196
160	0	0	0	21.66665	48.7538	4.27759
157	1	0	1	24.83331	49.8135	3.67642
191	0	1	1	11.83332	45.3549	4.07312
220	1	1	1	3.33333	38.5566	2.67947
138	1	1	0	8.66666	36.0623	3.85528
186	1	0	0	15.99999	268.185	5.68671
131	0	1	0	5.33333	57.2999	3.9205
126	0	0	1	12.16666	41.4008	4.04295
196	1	1	0	22.1666	32.8803	3.95063
139	1	0	0	134.3332	40.1716	3.83686
198	1	1	1	81.16663	48.6229	4.16582
143	1	0	1	72.49997	36.9755	3.53732
145	1	1	1	11.49999	142.310	3.9603
190	1	0	0	122.83328	46.2019	4.60476
232	0	1	0	173.66659	30.5339	2.19187
210	0	1	1	24.83332	49.1985	4.41462
137	0	1	1	102.83329	38.4737	2.41349
171	0	0	0	11.66666	30.6769	1.91372
219	0	0	0	89.49996	32.38	2.46792
205	0	0	1	12.33332	42.219	3.33851
250	1	0	0	31.49998	48.7836	4.43156
271	1	1	0	8.499998	44.409599	5.1582234

	1 MS	2 Running	3 Lesion	4 Total distance (cm)	5 Arena Duration (s)	6 Duration in open arms (s)	7 Frequency o entry into open arms	8 Duration in closed arms (s)
305	0	1	0	383.36758	247.33323	0	0	247.33323
301	0	1	1	942.92516	247.33323	1.166667	1	232.66657
306	1	1	1	656.11435	247.33323	14.499994	6	145.83327
309	1	0	1	1080.5798	247.33323	22.166659	7	193.49992
311	0	0	0	982.64271	247.33323	79.166635	9	75.99997
315	0	0	0	1047.7759	247.33323	24.333322	3	147.99994
312	0	1	1	530.39453	247.33323	59.166643	3	158.33327
314	0	1	0	473.2768	247.33323	0.5	1	219.99991
313	0	1	0	746.18586	247.33323	0	0	126.33328
317	1	1	1	776.57239	247.33323	0	0	233.9999
318	1	1	0	946.58835	247.33323	0	0	235.16657
319	1	1	0	1051.3454	247.33323	9.33333	3	192.66659
320	1	1	1	527.55792	247.33323	0	0	233.33324
324	0	1	0	722.33493	247.33323	12.833327	4	205.16658
323	0	1	0	956.44097	247.33323	2.333332	2	225.66658
322	0	0	1	1013.2502	247.33323	8.499997	3	223.33324

	1 MS	2 Running	3 Lesion	4 Duration in central square (s)	5 Maximum velocity (cm/s)	6 Mean velocity (cm/s)
305	0	1	0	0	33.585731	1.5510496
301	0	1	1	13.499993	45.164376	3.8149381
306	1	1	1	86.999964	33.121151	2.6545435
309	1	0	1	31.666653	43.774285	4.3718688
311	0	0	0	92.166628	35.404716	3.97563
315	0	0	0	74.99997	44.075374	4.2391491
312	0	1	1	29.83332	40.269388	2.1458992
314	0	1	0	26.83332	35.057894	1.9148093
313	0	1	0	120.99995	30.917859	3.0189596
317	1	1	1	13.33333	32.11308	3.1418993
318	1	1	0	12.166661	46.980786	3.8297591
319	1	1	0	45.333314	35.783571	4.2535908
320	1	1	1	13.999993	29.103417	2.1344225
324	0	1	0	29.333322	34.511152	2.9224625
323	0	1	0	19.333325	30.715495	3.8696213
322	0	0	1	15.499992	60.397978	4.0994632

A5.1.5.2.1.2. EPM P63 Full Five Minutes Descriptive Statistics

	Descriptive Statistics (P63 Full five minutes spreadsheet)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	Total distance (cm) Mean	Total distance (cm) Std.Dev.	Total distance (cm) Std.Err	Total distance (cm) -95.00%	Total distance (cm) +95.00%
Total				61	887.005	229.562	29.3924	828.211	945.79
MS	0			32	827.205	237.615	42.0049	741.535	912.87
MS	1			29	952.992	204.496	37.9739	875.205	1030.77
Running	0			28	951.79	222.217	41.9951	865.629	1037.96
Running	1			33	832.03	224.400	39.0631	752.462	911.60
Lesion	0			32	912.568	252.312	44.6029	821.599	1003.53
Lesion	1			29	858.798	202.170	37.5420	781.896	935.69
MS*Running	0	0		15	896.109	246.406	63.6219	759.653	1032.56
MS*Running	0	1		17	766.407	218.834	53.0752	653.892	878.92
MS*Running	1	0		13	1016.05	178.667	49.5534	908.082	1124.01
MS*Running	1	1		16	901.75	215.122	53.7806	787.126	1016.38
MS*Lesion	0	0		17	812.198	261.935	63.5287	677.523	946.87
MS*Lesion	0	1		15	844.213	214.537	55.3933	725.405	963.02
MS*Lesion	1	0		15	1026.32	190.936	49.2994	920.583	1132.05
MS*Lesion	1	1		14	874.425	194.828	52.0701	761.934	986.91
Running*Lesion	0	0		15	978.967	253.005	65.3257	838.856	1119.07
Running*Lesion	0	1		13	920.446	185.576	51.4695	808.303	1032.58
Running*Lesion	1	0		17	853.983	244.036	59.1874	728.509	979.45
Running*Lesion	1	1		16	808.709	206.821	51.7053	698.502	918.91
MS*Running*Lesi	0	0	0	8	910.268	272.463	96.3304	682.483	1138.05
MS*Running*Lesi	0	0	1	7	879.928	233.429	88.2279	664.041	1095.81
MS*Running*Lesi	0	1	0	9	725.025	232.587	77.5290	546.242	903.80
MS*Running*Lesi	0	1	1	8	812.962	207.258	73.2769	639.689	986.23
MS*Running*Lesi	1	0	0	7	1057.47	221.963	83.8942	852.197	1262.76
MS*Running*Lesi	1	0	1	6	967.717	110.839	45.2501	851.397	1084.03
MS*Running*Lesi	1	1	0	8	999.057	169.892	60.0659	857.023	1141.09
MS*Running*Lesi	1	1	1	8	804.457	220.598	77.9932	620.032	988.88

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	Duration in open arms (s) Mean	Duration in open arms (s) Std.Dev.	Duration in open arms (s) Std.Err	Duration in open arms (s) -95.00%	Duration in open arms (s) +95.00%
Total				61	12.0245	16.8286	2.15468	7.7145	16.3346
MS	0			32	14.1562	20.8610	3.68775	6.6350	21.6774
MS	1			29	9.6724	10.6831	1.98381	5.6087	13.7360
Running	0			28	14.5357	17.0962	3.23088	7.9064	21.1649
Running	1			33	9.8939	16.5588	2.88252	4.0224	15.7654
Lesion	0			32	15.0208	19.5112	3.44912	7.9862	22.0553
Lesion	1			29	8.7183	12.7987	2.37666	3.8500	13.5867
MS*Running	0	0		15	17.1444	21.0795	5.44272	5.4709	28.8179
MS*Running	0	1		17	11.5196	20.9429	5.07941	0.7517	22.2874
MS*Running	1	0		13	11.5256	10.9955	3.04961	4.8811	18.1701
MS*Running	1	1		16	8.1666	10.5321	2.63303	2.5544	13.7788
MS*Lesion	0	0		17	16.7450	24.4070	5.91958	4.1961	29.2940
MS*Lesion	0	1		15	11.2222	16.2927	4.20677	2.1995	20.2448
MS*Lesion	1	0		15	13.0666	12.4275	3.20877	6.1845	19.9488
MS*Lesion	1	1		14	6.0357	7.2081	1.92647	1.8738	10.1976
Running*Lesion	0	0		15	19.4222	20.3832	5.26292	8.1343	30.7100
Running*Lesion	0	1		13	8.8974	10.4222	2.89060	2.5993	15.1955
Running*Lesion	1	0		17	11.1372	18.4351	4.47118	1.6587	20.6157
Running*Lesion	1	1		16	8.5729	14.7927	3.69818	0.6904	16.4554
MS*Running*Les	0	0	0	8	22.9583	25.9345	9.16924	1.2765	44.6401
MS*Running*Les	0	0	1	7	10.5000	12.4714	4.71376	-1.0341	22.0341
MS*Running*Les	0	1	0	9	11.2222	23.0209	7.67365	-6.4732	28.9177
MS*Running*Les	0	1	1	8	11.8541	19.9151	7.04107	-4.7953	28.5036
MS*Running*Les	1	0	0	7	15.3809	12.2072	4.61388	4.0911	26.6707
MS*Running*Les	1	0	1	6	7.0277	8.1400	3.32315	-1.5146	15.5702
MS*Running*Les	1	1	0	8	11.0416	13.0811	4.62489	0.1055	21.9777
MS*Running*Les	1	1	1	8	5.2916	6.9056	2.44152	-0.4816	11.0649

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	Frequency of entry into open arms Mean	Frequency of entry into open arms Std.Dev.	Frequency of entry into open arms Std.Err	Frequency of entry into open arms -95.00%	Frequency of entry into open arms +95.00%
Total				61	3.01639	2.67389	0.34235	2.33157	3.70121
MS	0			32	3.00000	2.60272	0.46010	2.06161	3.93838
MS	1			29	3.03448	2.79646	0.51929	1.97076	4.09820
Running	0			28	3.67857	2.59705	0.49079	2.67153	4.68560
Running	1			33	2.45454	2.64682	0.46075	1.51602	3.39306
Lesion	0			32	3.50000	2.97299	0.52555	2.42812	4.57188
Lesion	1			29	2.48275	2.23000	0.41410	1.63451	3.33100
MS*Running	0	0		15	3.53333	2.64214	0.68220	2.07016	4.99650
MS*Running	0	1		17	2.52941	2.55239	0.61904	1.21709	3.84173
MS*Running	1	0		13	3.84615	2.64090	0.73245	2.25027	5.44203
MS*Running	1	1		16	2.37500	2.82547	0.70637	0.86940	3.88059
MS*Lesion	0	0		17	3.23529	2.99018	0.72522	1.69788	4.77270
MS*Lesion	0	1		15	2.73333	2.15362	0.55606	1.54069	3.92597
MS*Lesion	1	0		15	3.80000	3.02843	0.78193	2.12290	5.47709
MS*Lesion	1	1		14	2.21428	2.35922	0.63052	0.85211	3.57646
Running*Lesion	0	0		15	4.20000	2.83347	0.73160	2.63087	5.76912
Running*Lesion	0	1		13	3.07692	2.25320	0.62492	1.71532	4.43852
Running*Lesion	1	0		17	2.88235	3.03896	0.73705	1.31986	4.44484
Running*Lesion	1	1		16	2.00000	2.16024	0.54006	0.84888	3.15111
MS*Running*Les	0	0	0	8	3.87500	3.13676	1.10901	1.25260	6.49740
MS*Running*Les	0	0	1	7	3.14285	2.11570	0.79966	1.18616	5.09955
MS*Running*Les	0	1	0	9	2.66666	2.91547	0.97182	0.42563	4.90770
MS*Running*Les	0	1	1	8	2.37500	2.26384	0.80039	0.48237	4.26762
MS*Running*Les	1	0	0	7	4.57142	2.63673	0.99659	2.13285	7.01000
MS*Running*Les	1	0	1	6	3.00000	2.60768	1.06458	0.26340	5.73659
MS*Running*Les	1	1	0	8	3.12500	3.35676	1.18679	0.31867	5.93132
MS*Running*Les	1	1	1	8	1.62500	2.13391	0.75445	-0.15899	3.40899

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Duration in closed arms (s) Mean	Duration in closed arms (s) Std.Dev.	Duration in closed arms (s) Std.Err	Duration in closed arms (s) -95.00%	Duration in closed arms (s) +95.00%
Total				61	191.530	44.9057	5.7495	180.029	203.030
MS	0			32	186.328	49.9841	8.8360	168.306	204.349
MS	1			29	197.270	38.6002	7.1678	182.587	211.952
Running	0			28	183.267	45.8588	8.6665	165.485	201.050
Running	1			33	198.540	43.5446	7.5801	183.100	213.980
Lesion	0			32	183.317	50.8927	8.9966	164.968	201.666
Lesion	1			29	200.591	35.9362	6.6732	186.922	214.261
MS*Running	0	0		15	180.166	49.3960	12.7540	152.812	207.521
MS*Running	0	1		17	191.764	51.3684	12.4586	165.353	218.175
MS*Running	1	0		13	186.846	43.1197	11.9592	160.789	212.903
MS*Running	1	1		16	205.739	33.5135	8.3783	187.881	223.597
MS*Lesion	0	0		17	176.323	57.2785	13.8921	146.873	205.773
MS*Lesion	0	1		15	197.666	39.0306	10.0776	176.052	219.281
MS*Lesion	1	0		15	191.244	43.1151	11.1322	167.368	215.120
MS*Lesion	1	1		14	203.726	33.4736	8.9462	184.399	223.053
Running*Lesion	0	0		15	166.866	49.9508	12.8972	139.204	194.528
Running*Lesion	0	1		13	202.192	33.1160	9.1847	182.180	222.204
Running*Lesion	1	0		17	197.833	48.5538	11.7760	172.869	222.797
Running*Lesion	1	1		16	199.291	39.1060	9.7765	178.453	220.129
MS*Running*Les	0	0	0	8	162.312	51.4393	18.1865	119.308	205.316
MS*Running*Les	0	0	1	7	200.571	41.1760	15.5631	162.489	238.652
MS*Running*Les	0	1	0	9	188.777	62.2543	20.7514	140.924	236.630
MS*Running*Les	0	1	1	8	195.124	39.7203	14.0432	161.917	228.331
MS*Running*Les	1	0	0	7	172.071	51.7261	19.5506	124.232	219.910
MS*Running*Les	1	0	1	6	204.083	24.2793	9.9119	178.603	229.562
MS*Running*Les	1	1	0	8	208.020	27.1148	9.5865	185.352	230.689
MS*Running*Les	1	1	1	8	203.458	40.7387	14.4033	169.399	237.516

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Duration in centra square (s) Mean	Duration in centra square (s) Std.Dev.	Duration in centra square (s) Std.Err	Duration in centra square (s) -95.00%	Duration in centra square (s) +95.00%
Total				61	43.7240	38.7123	4.9566	33.8093	53.638
MS	0			32	46.8489	42.3164	7.4805	31.5922	62.105
MS	1			29	40.2758	34.7184	6.4470	27.0696	53.482
Running	0			28	49.4106	36.4955	6.8970	35.2591	63.562
Running	1			33	38.8989	40.4208	7.0363	24.5663	53.231
Lesion	0			32	48.8906	43.8112	7.7448	33.0949	64.686
Lesion	1			29	38.0229	31.9709	5.9368	25.8618	50.184
MS*Running	0	0		15	50.0222	34.6020	8.9342	30.8602	69.184
MS*Running	0	1		17	44.0490	49.0310	11.8917	18.8395	69.258
MS*Running	1	0		13	48.7051	39.9872	11.0904	24.5410	72.869
MS*Running	1	1		16	33.4270	29.3126	7.3281	17.8074	49.046
MS*Lesion	0	0		17	54.2646	48.0973	11.6653	29.5353	78.994
MS*Lesion	0	1		15	38.4444	34.3335	8.8648	19.4311	57.457
MS*Lesion	1	0		15	42.7999	39.1344	10.1044	21.1280	64.471
MS*Lesion	1	1		14	37.5714	30.5228	8.1575	19.9480	55.194
Running*Lesion	0	0		15	60.8222	40.3915	10.4290	38.4541	83.190
Running*Lesion	0	1		13	36.2435	27.2552	7.5592	19.7733	52.713
Running*Lesion	1	0		17	38.3627	45.1676	10.9547	15.1396	61.585
Running*Lesion	1	1		16	39.4687	36.1765	9.0441	20.1916	58.745
MS*Running*Les	0	0	0	8	62.0624	33.7094	11.9180	33.8807	90.244
MS*Running*Les	0	0	1	7	36.2618	32.4623	12.2696	6.2392	66.284
MS*Running*Les	0	1	0	9	47.3333	59.3091	19.7697	1.7442	92.922
MS*Running*Les	0	1	1	8	40.3541	38.0183	13.4415	8.5700	72.138
MS*Running*Les	1	0	0	7	59.4047	49.7661	18.8098	13.3787	105.430
MS*Running*Les	1	0	1	6	36.2222	22.7656	9.2940	12.3311	60.113
MS*Running*Les	1	1	0	8	28.2708	20.5711	7.2730	11.0728	45.468
MS*Running*Les	1	1	1	8	38.5833	36.8411	13.0253	7.7833	69.383

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level of Factor	Level of Factor	Level of Factor	N	Maximum velocity (cm/s) Mean	Maximum velocity (cm/s) Std.Dev.	Maximum velocity (cm/s) Std.Err	Maximum velocity (cm/s) -95.00%	Maximum velocity (cm/s) +95.00%
Total				61	45.0005	32.7392	4.1918	36.6156	53.385
MS	0			32	39.8166	8.3002	1.4672	36.8241	42.809
MS	1			29	50.7206	46.4323	8.6222	33.0587	68.382
Running	0			28	49.3628	43.5554	8.2312	32.4737	66.251
Running	1			33	41.2992	19.4497	3.3857	34.4026	48.195
Lesion	0			32	46.3928	41.1103	7.2673	31.5710	61.214
Lesion	1			29	43.4641	20.5192	3.8103	35.6590	51.269
MS*Running	0	0		15	41.4056	9.3118	2.4043	36.2488	46.562
MS*Running	0	1		17	38.4146	7.2908	1.7682	34.6661	42.163
MS*Running	1	0		13	58.5442	63.2202	17.5341	20.3406	96.747
MS*Running	1	1		16	44.3640	27.0347	6.7586	29.9582	58.769
MS*Lesion	0	0		17	38.3997	7.5674	1.8353	34.5089	42.290
MS*Lesion	0	1		15	41.4225	9.0500	2.3367	36.4108	46.434
MS*Lesion	1	0		15	55.4518	59.2564	15.2999	22.6366	88.266
MS*Lesion	1	1		14	45.6516	28.4374	7.6002	29.2323	62.071
Running*Lesion	0	0		15	55.7774	59.0863	15.2560	23.0564	88.498
Running*Lesion	0	1		13	41.9614	9.1974	2.5509	36.4034	47.519
Running*Lesion	1	0		17	38.1124	8.0176	1.9445	33.9901	42.234
Running*Lesion	1	1		16	44.6852	26.7342	6.6835	30.4395	58.930
MS*Running*Les	0	0	0	8	40.1895	6.6040	2.3348	34.6684	45.710
MS*Running*Les	0	0	1	7	42.7953	12.1332	4.5859	31.5739	54.016
MS*Running*Les	0	1	0	9	36.8087	8.3857	2.7952	30.3629	43.254
MS*Running*Les	0	1	1	8	40.2213	5.8384	2.0642	35.3402	45.102
MS*Running*Les	1	0	0	7	73.5920	86.0290	32.5159	-5.9715	153.155
MS*Running*Les	1	0	1	6	40.9884	4.9250	2.0106	35.8199	46.156
MS*Running*Les	1	1	0	8	39.5790	7.8691	2.7821	33.0003	46.157
MS*Running*Les	1	1	1	8	49.1490	38.1039	13.4717	17.2933	81.004

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet)								
	Level c Factor	Level of Factor	Level of Factor	N	Mean velocity (cm/s) Mean	Mean velocity (cm/s) Std.Dev.	Mean velocity (cm/s) Std.Err	Mean velocity (cm/s) -95.00%	Mean velocity (cm/s) +95.00%
Total				61	3.58995	0.93160	0.11928	3.35135	3.82854
MS	0			32	3.34675	0.96135	0.16994	3.00014	3.69335
MS	1			29	3.85831	0.83327	0.15473	3.54135	4.17527
Running	0			28	3.85356	0.90471	0.17097	3.50275	4.20438
Running	1			33	3.36627	0.90789	0.15804	3.04435	3.68820
Lesion	0			32	3.69451	1.02554	0.18129	3.32476	4.06426
Lesion	1			29	3.47457	0.81795	0.15189	3.16344	3.78570
MS*Running	0	0		15	3.62552	0.99692	0.25740	3.07344	4.17760
MS*Running	0	1		17	3.10077	0.88537	0.21473	2.64555	3.55599
MS*Running	1	0		13	4.11669	0.73630	0.20421	3.67174	4.56163
MS*Running	1	1		16	3.64837	0.87035	0.21758	3.18459	4.11215
MS*Lesion	0	0		17	3.28603	1.05975	0.25702	2.74116	3.83091
MS*Lesion	0	1		15	3.41556	0.86798	0.22411	2.93488	3.89623
MS*Lesion	1	0		15	4.15745	0.78301	0.20217	3.72383	4.59107
MS*Lesion	1	1		14	3.53779	0.78824	0.21066	3.08267	3.99291
Running*Lesion	0	0		15	3.96587	1.03260	0.26661	3.39403	4.53770
Running*Lesion	0	1		13	3.72399	0.75081	0.20823	3.27027	4.17770
Running*Lesion	1	0		17	3.45508	0.98733	0.23946	2.94744	3.96272
Running*Lesion	1	1		16	3.27192	0.83677	0.20919	2.82603	3.71780
MS*Running*Les	0	0	0	8	3.68281	1.10234	0.38973	2.76122	4.60440
MS*Running*Les	0	0	1	7	3.56005	0.94442	0.35695	2.68661	4.43350
MS*Running*Les	0	1	0	9	2.93334	0.94101	0.31367	2.21002	3.65667
MS*Running*Les	0	1	1	8	3.28912	0.83853	0.29646	2.58809	3.99016
MS*Running*Les	1	0	0	7	4.28936	0.91724	0.34668	3.44105	5.13767
MS*Running*Les	1	0	1	6	3.91524	0.44844	0.18307	3.44463	4.38585
MS*Running*Les	1	1	0	8	4.04203	0.68735	0.24301	3.46739	4.61668
MS*Running*Les	1	1	1	8	3.25471	0.89250	0.31554	2.50855	4.00087

A5.1.5.2.1.3. EPM P63 Full Five Minutes Distance Travelled ANOVA

Effect	Univariate Tests of Significance for Total distance (cm) (P63 Full five minu Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	4816313	1	4816313	1029.38	0.00000
MS	23556	1	23556	5.035	0.02904
Running	21116	1	21116	4.513	0.03831
Lesion	4835	1	4835	1.033	0.31397
MS*Running	876	1	876	0.019	0.89167
MS*Lesion	10995	1	10995	2.350	0.13122
Running*Lesion	170	1	170	0.004	0.95218
MS*Running*Lesion	4680	1	4680	1.000	0.32175
Error	247977	53	4678		

A5.1.5.2.1.4. EPM P63 Full Five Minutes Distance Travelled post hoc Newman Keuls test (MS effect)

Newman-Keuls test; variable Total distance (cm) (P63 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 46788., df = 53.000

Cell No.	MS	{1} 827.21	{2} 952.99
1	0		0.027521
2	1	0.027521	

A5.1.5.2.1.5. EPM P63 Full Five Minutes Distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total distance (cm) (P63 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 46788., df = 53.000

Cell No.	Running	{1} 951.80	{2} 832.03
1	0		0.035824
2	1	0.035824	

A5.1.5.2.1.6. EPM P63 Full Five Minutes Open Arm Duration ANOVA

Univariate Tests of Significance for Duration in open arms (s) (P63 Full fiv
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	8535.71	1	8535.705	29.34855	0.000001
MS	297.68	1	297.678	1.02351	0.316283
Running	254.67	1	254.674	0.87565	0.353641
Lesion	632.20	1	632.202	2.17372	0.146303
MS*Running	17.44	1	17.439	0.05996	0.807503
MS*Lesion	4.87	1	4.874	0.01676	0.897485
Running*Lesion	231.58	1	231.581	0.79625	0.376251
MS*Running*Lesion	103.41	1	103.413	0.35557	0.553511
Error	15414.48	53	290.839		

A5.1.5.2.1.7. EPM P63 Full Five Minutes Open Arm Frequency ANOVA

	Univariate Tests of Significance for Frequency of entry into open arms (P6 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	558.942	1	558.942	76.7317	0.00000
MS	0.064	1	0.064	0.0088	0.92538
Running	21.643	1	21.643	2.9711	0.09059
Lesion	15.769	1	15.769	2.1648	0.14710
MS*Running	0.671	1	0.671	0.0922	0.76256
MS*Lesion	3.942	1	3.942	0.5412	0.46517
Running*Lesion	0.246	1	0.246	0.0338	0.85477
MS*Running*Lesion	0.128	1	0.128	0.0175	0.89501
Error	386.071	53	7.284		

A5.1.5.2.1.8. EPM P63 Full Five Minutes Closed Arm Duration ANOVA

	Univariate Tests of Significance for Duration in closed arms (s) (P63 Full fiv Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	221388	1	221388	1101.65	0.00000
MS	156	1	156	0.781	0.38091
Running	298	1	298	1.485	0.22833
Lesion	488	1	488	2.42	0.12503
MS*Running	192	1	192	0.096	0.75819
MS*Lesion	277	1	277	0.138	0.71202
Running*Lesion	441	1	441	2.195	0.14441
MS*Running*Lesion	20	1	20	0.01	0.92004
Error	10650	53	201		

A5.1.5.2.1.9. EPM P63 Full Five Minutes Central Square Duration ANOVA

	Univariate Tests of Significance for Duration in central square (s) (P63 Full Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	114196.	1	114196.	73.4073	0.00000
MS	520.6	1	520.6	0.3346	0.56537
Running	1460.4	1	1460.4	0.9387	0.33699
Lesion	1959.5	1	1959.5	1.2595	0.26678
MS*Running	309.3	1	309.3	0.1988	0.65750
MS*Lesion	372.7	1	372.7	0.2396	0.62651
Running*Lesion	2573.6	1	2573.6	1.6543	0.20395
MS*Running*Lesion	202.5	1	202.5	0.1301	0.71971
Error	82449.9	53	1555.7		

A5.1.5.2.1.10. EPM P63 Full Five Minutes Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for Maximum velocity (cm/s) (P63 Full fiv Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	124123.:	1	124123.:	115.182	0.00000
MS	1762.4	1	1762.4	1.635	0.20651
Running	951.3	1	951.3	0.882	0.35170
Lesion	272.2	1	272.2	0.252	0.61731
MS*Running	372.3	1	372.3	0.345	0.55918
MS*Lesion	793.6	1	793.6	0.736	0.39465
Running*Lesion	1737.(	1	1737.(	1.611	0.20977
MS*Running*Lesion	1609.:	1	1609.:	1.493	0.22713
Error	57113.9	53	1077.6		

A5.1.5.2.1.11. EPM P63 Full Five Minutes Mean Velocity ANOVA

Effect	Univariate Tests of Significance for Mean velocity (cm/s) (P63 Full five mir Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	788.976:	1	788.976:	1024.87	0.00000
MS	3.897	1	3.897	5.063	0.02861
Running	3.496:	1	3.496:	4.542	0.03773
Lesion	0.810	1	0.810	1.053	0.30951
MS*Running	0.011	1	0.011	0.015	0.90148
MS*Lesion	1.828	1	1.828	2.375	0.12922
Running*Lesion	0.004(	1	0.004(	0.005	0.94271
MS*Running*Lesion	0.747	1	0.747	0.971	0.32883
Error	40.800(	53	0.769		

A5.1.5.2.1.12. EPM P63 Full Five Minutes Mean Velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable Mean velocity (cm/s) (P63 Full five minutes spread Approximate Probabilities for Post Hoc Tests Error: Between MS = .76982, df = 53.000 MS	{1} 3.3468	{2} 3.8583
1	0		0.02713
2	1	0.02713	

A5.1.5.2.1.13. EPM P63 Full Five Minutes Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Mean velocity (cm/s) (P63 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = .76982, df = 53.000

Cell No.	Running	{1} 3.8536	{2} 3.3663
1	0		0.035284
2	1	0.035284	

A5.1.5.2.2.1.1. EPM P63 1 minute intervals data spreadsheet

	P63								
	1 MS	2 Running	3 Lesion	4 1. Total distance (cm)	5 1. Arena Duration (s)	6 1. Duration in open arms (s)	7 1. Frequency of entry into open arms	8 1. Duration in closed arms (s)	9 1. Duration in centra square (s)
222	0	1	0	317.622	49	0.166667	1	44.66667	4.166664
193	0	0	1	393.697	49	4.500018	3	35.66665	8.833328
203	0	1	1	382.998	49	6.499997	1	32.50001	9.999997
167	0	0	0	418.205	49	1.166667	1	32.83334	14.99999
182	1	1	1	308.634	49	3.666666	1	39.5	5.83333
209	1	0	1	381.775	49	4.333332	2	34.33334	10.33333
216	1	1	0	325.329	49	0	0	30.66665	18.33335
144	1	0	0	375.811	49	0.50002	2	41.99998	6.499997
234	0	0	1	299.797	49	4.999998	1	31.49999	12.50001
169	0	0	0	329.065	49	2.999999	3	29.99999	16.00001
117	0	0	1	486.338	49	20.99999	3	18.66666	9.333349
188	0	1	1	317.186	49	0	0	39.16667	9.833328
160	0	0	0	397.028	49	11.16666	3	33.99999	3.833351
157	1	0	1	386.864	49	3.666666	2	30.66667	14.66666
191	0	1	1	382.14	49	0	0	46.16667	2.833332
220	1	1	1	225.915	49	0	0	48.16665	0.833353
138	1	1	0	344.873	49	0	0	45	3.999998
186	1	0	0	270.45	49	1.166665	2	41	6.833331
131	0	1	0	409.648	49	7.499997	1	38.33334	3.166666
126	0	0	1	365.837	49	2.833332	5	37.66665	8.500017
196	1	1	0	344.43	49	7.83333	1	32.16667	8.999997
139	1	0	0	353.728	49	2.166666	1	35.83332	11.00002
198	1	1	1	345.172	49	0.499999	1	27.49999	21.00001
143	1	0	1	293.066	49	1.666666	1	43.16667	4.166665
145	1	1	1	373.021	49	0	0	41.5	7.499997
190	1	0	0	363.218	49	0	0	19.66666	29.33334
232	0	1	0	252.559	49	2.999999	3	31.16667	14.83333
210	0	1	1	444.818	49	10.33333	5	30.33334	8.33333
137	0	1	1	308.571	49	0	0	42.16665	6.833351
171	0	0	0	275.35	49	0	0	40.33332	8.666684
219	0	0	0	286.619	49	0	0	38.66665	10.33335
205	0	0	1	335.41	49	1.333333	1	38.50001	9.166662
311	0	0	0	313.766	49	19.33332	2	24.66668	4.999998
315	0	0	0	376.316	49	23.50001	3	14.83333	10.66666
312	0	1	1	285.672	49	4.999998	2	26.83332	17.16668
314	0	1	0	292.453	49	0.5	1	26.16668	22.33332
313	0	1	0	266.378	49	0	0	42	6.999998
317	1	1	1	323.106	49	0	0	44	4.999999
318	1	1	0	379.366	49	0	0	43.5	5.499996
319	1	1	0	410.64	49	8.83333	2	31.50001	8.666661
320	1	1	1	246.488	49	0	0	38.49998	10.50002
324	0	1	0	262.865	49	12.50001	4	21.83332	14.66666
323	0	1	0	349.987	49	2.333332	2	35.33334	11.33333

	P63							
	1 MS	2 Running	3 Lesion	4 1. Maximun velocity (cm/s)	5 1. Mean velocity (cm/s)	6 2. Total distance (cm)	7 2. Arena Duration (s)	8 2. Duration in open arms (s)
222	0	1	0	39.18509	6.4820889	165.93011	49	0.333333
193	0	0	1	34.09686	8.0346271	216.20375	49	0.833313
203	0	1	1	34.80578	7.8162869	197.94997	49	6.333331
167	0	0	0	45.9902	8.5347906	258.15996	49	1
182	1	1	1	33.20115	6.2986490	92.170754	49	0
209	1	0	1	38.03861	7.7913376	245.43772	49	0
216	1	1	0	41.0076	6.6393777	131.27963	49	0
144	1	0	0	44.80536	7.6696192	199.31447	49	5.999977
234	0	0	1	38.754	6.1183038	220.53119	49	5.666665
169	0	0	0	42.95626	6.7156252	212.90688	49	0.166667
117	0	0	1	55.04313	9.9252634	220.70930	49	0
188	0	1	1	35.59032	6.4731907	104.12207	49	2.166666
160	0	0	0	48.75384	8.1026178	214.28041	49	0
157	1	0	1	49.81352	7.8951864	231.85824	49	0
191	0	1	1	45.35493	7.7987715	208.68565	49	0
220	1	1	1	38.55662	4.6105062	168.98836	49	0
138	1	1	0	35.99754	7.0382174	149.25282	49	0
186	1	0	0	29.98349	5.5193953	211.34144	49	0
131	0	1	0	57.29993	8.3601754	201.06056	49	0
126	0	0	1	40.70451	7.4660711	235.69425	49	0
196	1	1	0	29.96486	7.0291833	190.73811	49	0
139	1	0	0	40.17161	7.2189521	215.62096	49	4.166705
198	1	1	1	40.83351	7.0443224	219.53912	49	1.833333
143	1	0	1	36.97559	5.9809358	214.39617	49	0
145	1	1	1	142.3102	7.6126678	278.34227	49	0
190	1	0	0	46.20193	7.4126245	239.94631	49	0
232	0	1	0	30.53399	5.1542672	134.73281	49	0.666667
210	0	1	1	49.19851	9.0779234	261.04405	49	4.166665
137	0	1	1	38.47377	6.2973670	117.82227	49	0.333333
171	0	0	0	30.67698	5.6193873	106.58669	49	0
219	0	0	0	32.381	5.8493645	75.383018	49	0
205	0	0	1	42.2196	6.8451091	166.09269	49	0
311	0	0	0	34.96548	6.4033947	255.86004	49	20.99999
315	0	0	0	44.07537	7.6799254	221.46147	49	0.833313
312	0	1	1	40.26939	5.8300404	53.187769	49	44.50002
314	0	1	0	35.05789	5.9684357	80.773679	49	0
313	0	1	0	27.47561	5.4362817	107.28532	49	0
317	1	1	1	32.11308	6.5940086	117.36614	49	0
318	1	1	0	46.98079	7.7421737	289.44551	49	0
319	1	1	0	35.78357	8.3804091	200.92096	49	0.5
320	1	1	1	29.10342	5.0303788	111.60398	49	0
324	0	1	0	34.51115	5.3645914	168.59305	49	0.333313
323	0	1	0	30.7155	7.1425964	206.28374	49	0

	P63							
	1 MS	2 Running	3 Lesion	4 2. Frequency of entry into open arms	5 2. Duration in closed arms (s)	6 2. Duration in central square (s)	7 2. Maximum velocity (cm/s)	8 2. Mean velocity (cm/s)
222	0	1	0	1	41.16667	7.499997	26.9275997	3.3863306
193	0	0	1	1	39.500023	8.666664	33.7532938	4.4123232
203	0	1	1	1	30.166674	12.499995	28.6539991	4.0397970
167	0	0	0	1	42.333337	5.666663	34.6816025	5.2685729
182	1	1	1	0	48.5	0.5	29.3603305	1.8810365
209	1	0	1	0	38.333338	10.666662	29.8084654	5.0089351
216	1	1	0	0	48.000021	0.999979	32.2194467	2.6791767
144	1	0	0	4	30.166694	12.833329	29.5107786	4.0676439
234	0	0	1	1	18.166659	25.166676	42.1916659	4.5006385
169	0	0	0	1	28.333322	20.500011	34.590514	4.3450406
117	0	0	1	0	27.166696	21.833304	37.7794523	4.5042737
188	0	1	1	2	11.833309	35.000025	17.5820103	2.1249412
160	0	0	0	0	42.333316	6.666684	30.9777533	4.3730712
157	1	0	1	0	45.666669	3.333331	33.0593947	4.7318030
191	0	1	1	0	48	1	33.7447449	4.2588928
220	1	1	1	0	47.666688	1.333312	27.9490751	3.4487436
138	1	1	0	0	48.666667	0.333333	32.7184107	3.0459778
186	1	0	0	0	41.666669	7.333331	25.181734	4.3130926
131	0	1	0	0	48.000001	0.999999	31.2966975	4.1032788
126	0	0	1	0	47.166687	1.833313	36.2692111	4.8100885
196	1	1	0	0	45.166667	3.833333	32.8803583	3.8926159
139	1	0	0	1	24.666657	20.166638	30.4518092	4.4004302
198	1	1	1	1	18.66666	28.500007	33.6065405	4.4803916
143	1	0	1	0	42.499963	6.500037	30.2214975	4.3754339
145	1	1	1	0	47.000001	1.999999	112.749478	5.6804583
190	1	0	0	0	15.666701	33.333299	36.6664805	4.8968657
232	0	1	0	1	24.00001	24.333323	21.6477841	2.7496506
210	0	1	1	2	33.166673	11.666662	34.1699577	5.3274313
137	0	1	1	1	6.166704	42.499963	22.9869411	2.4045371
171	0	0	0	0	46.000021	2.999979	24.9294481	2.1752393
219	0	0	0	0	11.333369	37.666631	16.3091998	1.5384296
205	0	0	1	0	48.333334	0.666666	34.9330003	3.3896480
311	0	0	0	4	15.666641	12.333366	29.3679876	5.2216363
315	0	0	0	1	28.499989	19.666698	38.7700869	4.5196239
312	0	1	1	1	0	4.499978	11.3022744	1.0854650
314	0	1	0	0	47.000001	1.999999	16.4540673	1.6484429
313	0	1	0	0	37.166672	11.833328	30.917859	2.1894975
317	1	1	1	0	47.5	1.5	29.646913	2.3952282
318	1	1	0	0	43.500001	5.499999	42.1566601	5.9070546
319	1	1	0	1	19.666677	28.833323	23.736257	4.1004301
320	1	1	1	0	46.833316	2.166684	18.0662399	2.2776333
324	0	1	0	1	36.000026	12.666661	23.6296637	3.4406765
323	0	1	0	0	44.333336	4.666664	29.1896573	4.2098745

	P63							
	1 MS	2 Running	3 Lesion	4 3. Total distance (cm)	5 3. Arena Duration (s)	6 3. Duration in open arms (s)	7 3. Frequency of entry into open arms	8 3. Duration in closed arms (s)
222	0	1	0	113.685238	49	0	0	46.500001
193	0	0	1	135.766087	49	0	0	43.000002
203	0	1	1	64.552713	49	0	0	48.833274
167	0	0	0	223.694717	49	1	1	45.333336
182	1	1	1	124.575099	49	11.999995	2	25.00001
209	1	0	1	203.065882	49	0	0	42.500002
216	1	1	0	113.26537	49	3.666665	1	13.166681
144	1	0	0	147.000633	49	0	0	48
234	0	0	1	138.435761	49	0.666666	1	30.999988
169	0	0	0	160.602459	49	10.166662	1	14.333387
117	0	0	1	112.741562	49	0	0	44.500003
188	0	1	1	134.687974	49	1.333332	2	17.500052
160	0	0	0	144.371572	49	0	0	41.333376
157	1	0	1	121.744706	49	0	0	48.000001
191	0	1	1	163.288292	49	0	0	48.666667
220	1	1	1	151.711667	49	0	0	48.166667
138	1	1	0	98.9462942	49	0	0	49
186	1	0	0	244.058758	49	0	0	47.833334
131	0	1	0	112.69485	49	0	0	48.666666
126	0	0	1	74.9339758	49	0	0	49
196	1	1	0	176.37775	49	1.666666	1	40.333336
139	1	0	0	206.309121	49	15.833287	8	8.500055
198	1	1	1	141.459351	49	0	0	25.166715
143	1	0	1	165.781956	49	0	0	30.000048
145	1	1	1	91.7053833	49	0	0	49
190	1	0	0	191.455086	49	6.666664	1	38.500004
232	0	1	0	42.0408905	49	0	0	12.666622
210	0	1	1	111.311928	49	0	0	48.333333
137	0	1	1	67.6027687	49	0	0	49
171	0	0	0	27.6657424	49	0	0	49
219	0	0	0	109.329347	49	0	0	38.500004
205	0	0	1	180.365671	49	0	0	47.500001
311	0	0	0	158.818208	49	37.166651	2	0
315	0	0	0	187.607127	49	0	0	42.833375
312	0	1	1	137.100447	49	9.666623	1	31.166714
314	0	1	0	57.4417556	49	0	0	47.833334
313	0	1	0	129.339336	49	0	0	20.333286
317	1	1	1	113.673229	49	0	0	43.166669
318	1	1	0	80.7270764	49	0	0	49
319	1	1	0	189.898999	49	0	0	44.166669
320	1	1	1	49.9842334	49	0	0	48.333373
324	0	1	0	163.137416	49	0	0	48.166667
323	0	1	0	140.47638	49	0	0	48.166667

	P63							
	1 MS	2 Running	3 Lesion	4 3. Duration in central square (s)	5 3. Maximum velocity (cm/s)	6 3. Mean velocity (cm/s)	7 4. Total distance (cm)	8 4. Arena Duration (s)
222	0	1	0	2.499999	25.8336452	2.32010802	46.0712651	49
193	0	0	1	5.999998	30.8353379	2.77073726	179.030323	49
203	0	1	1	0.166726	21.1926871	1.3174029	129.619512	49
167	0	0	0	2.666664	38.4333081	4.56519932	309.239536	49
182	1	1	1	11.999995	21.5544845	2.54234947	95.670682	49
209	1	0	1	6.499998	28.0093633	4.14420361	139.828891	49
216	1	1	0	32.166654	29.7435006	2.31153851	68.075799	49
144	1	0	0	1	37.624747	3.00001416	82.085801	49
234	0	0	1	17.333346	21.194413	2.82522092	108.70685	49
169	0	0	0	24.499951	30.7921193	3.2776022	103.909191	49
117	0	0	1	4.499997	34.8779693	2.30084877	126.023606	49
188	0	1	1	30.166616	24.5793579	2.74873539	96.123031	49
160	0	0	0	7.666624	29.1055533	2.94635998	174.228187	49
157	1	0	1	0.999999	28.7320539	2.48458662	51.581421	49
191	0	1	1	0.333333	30.2966629	3.33241572	176.450109	49
220	1	1	1	0.833333	27.8509364	3.09615738	72.919161	49
138	1	1	0	0	19.2957638	2.01931294	164.853857	49
186	1	0	0	1.166666	189.779644	4.98079581	483.557416	49
131	0	1	0	0.333334	25.0323302	2.29989576	48.968208	49
126	0	0	1	0	24.0142708	1.5292653	209.79058	49
196	1	1	0	6.999998	24.3615657	3.59954767	169.645812	49
139	1	0	0	24.666658	34.5414457	4.2103912	83.860607	49
198	1	1	1	23.833285	34.5756597	2.88692639	200.822393	49
143	1	0	1	18.999952	25.9215706	3.38330644	78.151274	49
145	1	1	1	0	53.1977619	1.87154032	36.481404	49
190	1	0	0	3.833332	29.8084041	3.90724815	225.14741	49
232	0	1	0	36.333378	11.4473571	0.85797770	51.204553	49
210	0	1	1	0.666667	25.5823071	2.2716728	146.032773	49
137	0	1	1	0	25.0547878	1.37964854	35.234621	49
171	0	0	0	0	3.94794266	0.56460716	29.856409	49
219	0	0	0	10.499996	18.8904898	2.23121214	66.691969	49
205	0	0	1	1.499999	32.208036	3.6809336	28.2172203	49
311	0	0	0	11.833349	35.4047163	3.24118974	138.020757	49
315	0	0	0	6.166625	35.1207243	3.82871847	183.88292	49
312	0	1	1	8.166663	24.9664183	2.79796921	28.774982	49
314	0	1	0	1.166666	23.3451011	1.17228134	19.246226	49
313	0	1	0	28.666714	27.1885205	2.63957963	168.362169	49
317	1	1	1	5.833331	27.0068085	2.31986309	41.724903	49
318	1	1	0	0	18.6504362	1.64749195	148.61411	49
319	1	1	0	4.833331	34.0237356	3.8754913	138.524322	49
320	1	1	1	0.666627	19.2558268	1.02008676	77.223432	49
324	0	1	0	0.833333	22.6557534	3.3293377	86.415243	49
323	0	1	0	0.833333	28.4858709	2.86686619	102.25589	49

	P63							
	1 MS	2 Running	3 Lesion	4 4. Duration in open arms (s)	5 4. Frequency of entry into open arms	6 4. Duration in closed arms (s)	7 4. Duration in central square (s)	8 4. Maximu velocity (cm/s)
222	0	1	0	0	0	49	0	9.6559090
193	0	0	1	0	0	46.500002	2.499998	31.584719
203	0	1	1	0	0	46.666727	2.333273	24.344958
167	0	0	0	14.333328	1	29.500008	5.166664	32.330209
182	1	1	1	0	0	49	0	27.478487
209	1	0	1	0	0	38.333338	10.666662	29.965712
216	1	1	0	0	0	49	0	25.746905
144	1	0	0	0	0	49	0	20.232892
234	0	0	1	0	0	26.666734	22.333266	20.401784
169	0	0	0	0	0	47.500001	1.499999	22.617500
117	0	0	1	0	0	33.166593	15.833407	27.811760
188	0	1	1	0	0	38.666669	10.333331	19.244067
160	0	0	0	0	0	47.833334	1.166666	30.722166
157	1	0	1	0	0	49	0	11.979155
191	0	1	1	3.333332	1	38.000005	7.666663	32.729809
220	1	1	1	0	0	48.666667	0.333333	37.087815
138	1	1	0	0	0	47.666667	1.333333	33.207966
186	1	0	0	0	0	48.5	0.5	236.97969
131	0	1	0	0	0	49	0	10.517953
126	0	0	1	6.499997	1	41.000004	1.499999	40.946159
196	1	1	0	0	0	47.666668	1.333332	26.775429
139	1	0	0	0	0	12.999936	36.000064	23.332483
198	1	1	1	0	0	41.333337	7.666663	33.883328
143	1	0	1	0	0	45.999922	3.000078	19.001488
145	1	1	1	0	0	49	0	6.3841940
190	1	0	0	0	0	24.166599	24.833401	32.066383
232	0	1	0	2.166666	1	0	46.833334	18.391568
210	0	1	1	0	0	48.333334	0.666666	26.308087
137	0	1	1	0	0	44.833256	4.166744	13.097556
171	0	0	0	0	0	49	0	5.1580166
219	0	0	0	0	0	23.166678	25.833322	26.245087
205	0	0	1	0	0	49	0	7.8996059
311	0	0	0	0	0	15.66666	33.33334	25.267255
315	0	0	0	0	0	46.666668	2.333332	39.314932
312	0	1	1	0	0	49	0	3.7289880
314	0	1	0	0	0	49	0	2.5789129
313	0	1	0	0	0	18.333326	30.666674	24.917218
317	1	1	1	0	0	49	0	8.2653609
318	1	1	0	0	0	47.833334	1.166666	34.869110
319	1	1	0	0	0	48.166667	0.833333	33.371651
320	1	1	1	0	0	48.333333	0.666667	26.596106
324	0	1	0	0	0	47.833334	1.166666	17.811958
323	0	1	0	0	0	47.500001	1.499999	16.071812

	P63							
	1 MS	2 Running	3 Lesion	4 4. Mean velocity (cm/s)	5 5. Total distance (cm)	6 5. Arena Duration (s)	7 5. Duration in open arms (s)	8 5. Frequency of entry into open arms
222	0	1	0	0.94023031	40.4158271	49	0	0
193	0	0	1	3.65368137	62.2527885	49	0.5	1
203	0	1	1	2.64529763	152.698631	49	0	0
167	0	0	0	6.31101286	137.1478	49	0	0
182	1	1	1	1.95246369	34.1223589	49	0	0
209	1	0	1	2.8536517	139.928393	49	5.499999	3
216	1	1	0	1.38930244	56.3322667	49	1.666764	1
144	1	0	0	1.67522129	86.2011496	49	0	0
234	0	0	1	2.21850834	33.8615511	49	0	0
169	0	0	0	2.12059674	75.3822809	49	0	0
117	0	0	1	2.57191157	168.980271	49	13.833427	2
188	0	1	1	1.96169546	87.1096494	49	0	0
160	0	0	0	3.55567884	126.68722	49	0	0
157	1	0	1	1.05268229	115.59448	49	0	0
191	0	1	1	3.60102353	72.7829852	49	0	0
220	1	1	1	1.48814704	41.8385124	49	0	0
138	1	1	0	3.36436643	192.748685	49	1.333333	2
186	1	0	0	9.86852181				
131	0	1	0	0.99935195	190.141428	49	0	0
126	0	0	1	4.28144163	111.238475	49	0	0
196	1	1	0	3.46216051	94.2835177	49	0	0
139	1	0	0	1.71144157	86.601129	49	0	0
198	1	1	1	4.09841778	119.994544	49	0	0
143	1	0	1	1.59492497	122.228916	49	0	0
145	1	1	1	0.74451890	198.478913	49	0	0
190	1	0	0	4.5948465	116.061297	49	0	0
232	0	1	0	1.04499139	59.8323518	49	0	0
210	0	1	1	2.9802617	112.729118	49	0	0
137	0	1	1	0.71907411	58.7233567	49	0	0
171	0	0	0	0.60931468	31.129274	49	0	0
219	0	0	0	1.36106136	69.8189636	49	0	0
205	0	0	1	0.57586187	113.333857	49	0	0
311	0	0	0	2.81675138	112.299277	49	1.666666	1
315	0	0	0	3.75271418	63.7486028	49	0	0
312	0	1	1	0.58724497	24.5980343	49	0	0
314	0	1	0	0.39278035	21.031139	49	0	0
313	0	1	0	3.4359641	74.3495667	49	0	0
317	1	1	1	0.85152894	178.429118	49	0	0
318	1	1	0	3.03294176	47.1103367	49	0	0
319	1	1	0	2.82702801	103.522175	49	0	0
320	1	1	1	1.57598879	40.9588083	49	0	0
324	0	1	0	1.76357705	37.2363975	49	0	0
323	0	1	0	2.08685566	151.135581	49	0	0

	P63						
	1 MS	2 Running	3 Lesion	4 5. Duration in closed arms (s)	5 5. Duration in central square (s)	6 5. Maximum velocity (cm/s)	7 5. Mean velocity (cm/s)
222	0	1	0	49	0	5.56315746	0.82481312
193	0	0	1	13.166584	35.333416	9.96763054	1.27046586
203	0	1	1	47.666667	1.333333	24.3837832	3.11630065
167	0	0	0	43.333335	5.666665	22.8934387	2.79893548
182	1	1	1	49	0	10.0364633	0.69637488
209	1	0	1	38.166671	5.33333	26.743119	2.85568247
216	1	1	0	30.833243	16.499993	20.6237201	1.1496386
144	1	0	0	49	0	15.4146689	1.75920775
234	0	0	1	49	0	4.5660875	0.69105246
169	0	0	0	24.833245	24.166755	22.208527	1.53841449
117	0	0	1	16.333327	18.833246	23.6918162	3.44857824
188	0	1	1	37.499906	11.500094	11.2613414	1.77774886
160	0	0	0	46.666668	2.333332	39.4684927	2.58545409
157	1	0	1	43.166671	5.833329	28.6500886	2.35907201
191	0	1	1	49	0	14.8467986	1.48536784
220	1	1	1	49	0	18.4505386	0.8538478
138	1	1	0	44.666668	2.999999	36.0623507	3.93364806
186	1	0	0		0		
131	0	1	0	48.166668	0.833332	39.4016566	3.88043892
126	0	0	1	48.666667	0.333333	41.400818	2.27017411
196	1	1	0	48	1	25.6299335	1.92415432
139	1	0	0	6.500096	42.499904	25.8273267	1.76737089
198	1	1	1	48.833333	0.166667	48.6229114	2.44886928
143	1	0	1	9.166761	39.833239	19.3235151	2.49446847
145	1	1	1	47.000001	1.999999	134.837729	4.05058922
190	1	0	0	19.833325	29.166675	28.7047221	2.36859826
232	0	1	0	0	49	8.05330939	1.22106887
210	0	1	1	47.333334	1.666666	29.9702369	2.3005944
137	0	1	1	0	49	8.73645552	1.19843655
171	0	0	0	49	0	4.35177212	0.63529133
219	0	0	0	46.166568	2.833432	12.7217884	1.42487711
205	0	0	1	48	1	32.7144024	2.3129369
311	0	0	0	19.999992	27.333342	16.710445	2.29182309
315	0	0	0	12.833348	36.166652	23.1867637	1.30099247
312	0	1	1	49	0	2.96976393	0.50200092
314	0	1	0	49	0	2.69550077	0.42920710
313	0	1	0	8.499997	40.500003	15.5396101	1.51733855
317	1	1	1	48	1	28.5946128	3.64141275
318	1	1	0	49	0	11.2309126	0.96143561
319	1	1	0	48.5	0.5	30.2432277	2.11269833
320	1	1	1	49	0	7.4406984	0.83589430
324	0	1	0	49	0	6.38380478	0.75992670
323	0	1	0	48	1	28.0185465	3.08440085

	P63								
	1 MS	2 Running	3 Lesion	4 1. Total distance (cm)	5 1. Arena Duration (s)	6 1. Duration in open arms (s)	7 1. Frequency of entry into open arms	8 1. Duration in closed arms (s)	9 1. Duration in centra square (s)
322	0	0	1	453.897	49	8.499997	3	28.66667	11.83333
250	1	0	0	377.029	49	4.999998	2	37.16667	6.83333
271	1	1	0	466.775	49	0	0	43.33334	5.666664
305	0	1	0	162.026	49	0	0	49	0
301	0	1	1	317.207	49	1.166667	1	38.33334	9.499995
306	1	1	1	291.523	49	6.333331	3	21.33335	21.33332
309	1	0	1	285.745	49	5.33335	2	37.66665	5.999999
227	0	0	1	166.762	49	0	0	47	1.999998
129	1	1	1	370.949	49	0.5	1	37.83334	10.66666
207	0	1	1	284.12	49	0	0	47.33333	1.666666
164	1	1	0	253.215	49	20.16668	4	16.66666	12.16666
141	1	0	1	308.943	49	0	0	47.66667	1.333333
174	0	1	0	198.756	49	0.333333	2	37.83334	10.83333
148	1	0	0	243.77	49	0.333333	1	37.33334	11.33333
176	0	0	0	266.35	49	12.66668	3	24.49999	11.83333
154	1	0	1	281.983	49	3.999998	2	30.33334	14.66666
122	1	1	0	266.475	49	2.833333	4	30.99999	15.16668
197	1	0	0	406.485	49	11.16668	3	31.83332	5.999995

	P63							
	1 MS	2 Running	3 Lesion	4 1. Maximun velocity (cm/s)	5 1. Mean velocity (cm/s)	6 2. Total distance (cm)	7 2. Arena Duration (s)	8 2. Duration in open arms (s)
322	0	0	1	60.39798	9.2632032	198.875191	49	0
250	1	0	0	48.78367	7.6944767	278.452401	49	3.499999
271	1	1	0	39.70974	9.5260315	300.52161	49	0
305	0	1	0	33.58573	3.3066492	80.685304	49	0
301	0	1	1	39.99583	6.4736118	234.36924	49	0
306	1	1	1	33.12115	5.9494448	260.51975	49	8.166663
309	1	0	1	29.20016	5.831528	237.83053	49	7.166644
227	0	0	1	24.21763	3.4033171	83.996443	49	0
129	1	1	1	36.16397	7.5703861	203.40827	49	0
207	0	1	1	32.91361	5.798379	151.00512	49	0
164	1	1	0	24.41238	5.1676619	231.21683	49	13.16664
141	1	0	1	38.77967	6.3049578	228.35385	49	0
174	0	1	0	27.91904	4.0562562	183.08944	49	5.666665
148	1	0	0	30.92527	4.9748940	187.64608	49	8.666703
176	0	0	0	33.08625	5.4357095	243.90233	49	5.166645
154	1	0	1	38.54879	5.7547597	223.14458	49	0
122	1	1	0	38.51653	5.4382690	264.24675	49	0
197	1	0	0	36.07156	8.2956112	323.87443	49	25.33330

	P63							
	1 MS	2 Running	3 Lesion	4 2. Frequency of entry into open arms	5 2. Duration in closed arms (s)	6 2. Duration in central square (s)	7 2. Maximum velocity (cm/s)	8 2. Mean velocity (cm/s)
322	0	0	1	0	47.166668	1.833332	34.9428842	4.0586793
250	1	0	0	1	36.666631	8.83337	34.093461	5.6827044
271	1	1	0	0	47.833333	1.166667	44.4095992	6.1330967
305	0	1	0	0	49	0	19.9916302	1.6466396
301	0	1	1	0	46.166668	2.833332	33.8047689	4.7830478
306	1	1	1	3	30.500007	10.33333	31.3207574	5.3167320
309	1	0	1	2	24.666696	17.16666	43.774285	4.8536864
227	0	0	1	0	48.5	0.5	23.2616812	1.7142140
129	1	1	1	0	28.833302	20.166698	34.6599075	4.1511909
207	0	1	1	0	38.66667	10.33333	21.5788848	3.0817388
164	1	1	0	5	24.00003	11.833328	27.888291	4.7187123
141	1	0	1	0	48	1	34.2137429	4.6602845
174	0	1	0	1	36.166672	7.166663	22.2450597	3.7365213
148	1	0	0	1	34.499966	5.833331	22.106953	3.8295132
176	0	0	0	1	35.333358	8.499997	41.2780156	4.9776014
154	1	0	1	0	46.833334	2.166666	27.1149541	4.5539730
122	1	1	0	0	41.16669	7.83331	35.9855779	5.3927931
197	1	0	0	4	13.166701	10.499995	30.9456833	6.6096858

	P63							
	1 MS	2 Running	3 Lesion	4 3. Total distance (cm)	5 3. Arena Duration (s)	6 3. Duration in open arms (s)	7 3. Frequency of entry into open arms	8 3. Duration in closed arms (s)
322	0	0	1	138.395765	49	0	0	48.500001
250	1	0	0	185.741326	49	4.499998	1	29.83338
271	1	1	0	182.971978	49	0	0	48.333333
305	0	1	0	85.9333144	49	0	0	49
301	0	1	1	131.98119	49	0	0	48.666667
306	1	1	1	29.9250208	49	0	0	49
309	1	0	1	232.275035	49	0	0	47.833334
227	0	0	1	90.016024	49	0	0	49
129	1	1	1	161.81699	49	5.33339	1	16.333327
207	0	1	1	138.087852	49	0	0	46.666668
164	1	1	0	207.897886	49	4.166664	2	41.16667
141	1	0	1	120.749312	49	0	0	48.666667
174	0	1	0	236.718441	49	25.833323	3	14.000014
148	1	0	0	95.9766489	49	2.166626	1	37.166711
176	0	0	0	178.819739	49	0	0	23.333284
154	1	0	1	168.496332	49	0.833333	1	34.83334
122	1	1	0	269.377317	49	8.33333	1	34.166672
197	1	0	0	179.881017	49	0	0	48.166668

	P63							
	1 MS	2 Running	3 Lesion	4 3. Duration in central square (s)	5 3. Maximum velocity (cm/s)	6 3. Mean velocity (cm/s)	7 4. Total distance (cm)	8 4. Arena Duration (s)
322	0	0	1	0.499999	28.6176535	2.82440483	188.52322	49
250	1	0	0	14.666622	37.9952653	3.79064127	96.3262947	49
271	1	1	0	0.666667	39.1355592	3.73412419	176.479027	49
305	0	1	0	0	20.8575365	1.75374211	38.0982157	49
301	0	1	1	0.333333	33.6786749	2.69349443	166.769119	49
306	1	1	1	0	4.19157587	0.61071501	38.8874255	49
309	1	0	1	1.166666	25.5819825	4.74030884	147.031508	49
227	0	0	1	0	13.1422286	1.83706264	41.8917796	49
129	1	1	1	27.333283	31.0419275	3.30238907	238.24252	49
207	0	1	1	2.333332	22.8393264	2.81812031	53.3556708	49
164	1	1	0	3.666666	20.2600196	4.24281503	148.931774	49
141	1	0	1	0.333333	29.6288803	2.46427257	115.136652	49
174	0	1	0	9.166663	39.4718898	4.83098982	208.047969	49
148	1	0	0	9.666663	16.3832957	1.95870805	35.5814829	49
176	0	0	0	25.666716	26.6434763	3.64938394	140.101594	49
154	1	0	1	13.333327	21.8611336	3.43870159	105.026424	49
122	1	1	0	6.499998	41.8223845	5.49749855	189.972419	49
197	1	0	0	0.833332	28.949856	3.6710427	131.588786	49

	P63							
	1 MS	2 Running	3 Lesion	4 4. Duration in open arms (s)	5 4. Frequency of entry into open arms	6 4. Duration in closed arms (s)	7 4. Duration in central square (s)	8 4. Maximum velocity (cm/s)
322	0	0	1	0	0	47.666667	1.333333	28.6569718
250	1	0	0	0	0	48.333334	0.666666	22.1304492
271	1	1	0	0	0	48.5	0.5	40.4063347
305	0	1	0	0	0	49	0	8.36415765
301	0	1	1	0	0	48.500001	0.499999	45.1643757
306	1	1	1	0	0	44.833256	4.166744	4.11167852
309	1	0	1	5.33341	1	38.999925	4.666665	24.9200753
227	0	0	1	0	0	49	0	6.20781266
129	1	1	1	3.999939	1	33.833399	11.166662	34.9009696
207	0	1	1	0	0	49	0	17.431228
164	1	1	0	0	0	48.166667	0.833333	17.0996985
141	1	0	1	0	0	48.666667	0.333333	28.3401465
174	0	1	0	31.666732	3	10.83327	6.499998	24.5260176
148	1	0	0	0	0	47.833255	1.166745	10.9651597
176	0	0	0	20.333325	4	4.666664	24.000011	35.9506346
154	1	0	1	0	0	38.500004	10.499996	20.5724236
122	1	1	0	11.833328	1	34.666672	2.5	51.619765
197	1	0	0	0	0	47.5	1.5	26.7315628

	P63							
	1 MS	2 Running	3 Lesion	4 4. Mean velocity (cm/s)	5 5. Total distance (cm)	6 5. Arena Duration (s)	7 5. Duration in open arms (s)	8 5. Frequency of entry into open arms
322	0	0	1	3.84741425	32.2225099	49	0	0
250	1	0	0	1.96584346	142.906305	49	0	0
271	1	1	0	3.60161438	146.600654	49	0	0
305	0	1	0	0.77751489	15.3246023	49	0	0
301	0	1	1	3.40345313	90.7803095	49	0	0
306	1	1	1	0.79362146	33.7643467	49	0	0
309	1	0	1	3.00064422	174.371288	49	4.333255	4
227	0	0	1	0.85493478	29.0000521	49	0	0
129	1	1	1	4.86209438	172.902096	49	0	0
207	0	1	1	1.0888918	33.9570859	49	0	0
164	1	1	0	3.03942532	88.405935	49	0	0
141	1	0	1	2.34972835	133.294559	49	0	0
174	0	1	0	4.24587948	219.106576	49	7.999918	1
148	1	0	0	0.72615288	147.28399	49	10.499996	3
176	0	0	0	2.8592169	50.8220578	49	0	0
154	1	0	1	2.14339737	117.184953	49	0	0
122	1	1	0	3.87698967	163.551172	49	0	0
197	1	0	0	2.68548625	173.79787	49	0	0

	P63						
	1 MS	2 Running	3 Lesion	4 5. Duration in closed arms (s)	5 5. Duration in central square (s)	6 5. Maximum velocity (cm/s)	7 5. Mean velocity (cm/s)
322	0	0	1	49	0	9.66864749	0.65760258
250	1	0	0	48.500001	0.499999	32.5930128	2.91645592
271	1	1	0	48.5	0.5	39.5582588	2.99185168
305	0	1	0	49	0	3.68911943	0.31274708
301	0	1	1	48.666666	0.333334	38.1640327	1.8526607
306	1	1	1	0.166666	48.833334	5.59904544	0.68906853
309	1	0	1	42.000082	2.666663	22.7256602	3.55859882
227	0	0	1	49	0	3.58447412	0.59183801
129	1	1	1	38.333338	10.666662	24.807215	3.52861533
207	0	1	1	49	0	3.89231781	0.69300209
164	1	1	0	49	0	15.0320123	1.8042035
141	1	0	1	48.166667	0.833333	32.1690166	2.72029837
174	0	1	0	38.333416	2.666666	28.5970141	4.47156578
148	1	0	0	5.499998	33.000006	26.438016	3.00579716
176	0	0	0	37.999984	11.000016	22.5108064	1.03718507
154	1	0	1	48.666667	0.333333	32.3613487	2.39153074
122	1	1	0	48.166667	0.833333	39.6719062	3.33777976
197	1	0	0	40.333336	8.666664	26.6265663	3.54689665

A5.1.5.2.2.1.2. EPM P63 1 minute intervals 1st interval Descriptive Statistics

	Descriptive Statistics (EPM P63 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	1. Total distance (cm) Mean	1. Total distance (cm) Std.Dev.	1. Total distance (cm) Std.Err	1. Total distance (cm) -95.00%	1. Total distance (cm) +95.00%
Total				61	327.938	68.836	8.8135	310.308	345.567
MS	0			32	324.982	77.747	13.7439	296.951	353.013
MS	1			29	331.199	58.655	10.8920	308.887	353.510
Running	0			28	339.046	69.075	13.0539	312.262	365.831
Running	1			33	318.512	68.257	11.8821	294.309	342.715
Lesion	0			32	323.643	69.895	12.3558	298.443	348.843
Lesion	1			29	332.677	68.561	12.7314	306.597	358.756
MS*Running	0	0		15	344.295	81.616	21.0733	299.097	389.493
MS*Running	0	1		17	307.941	72.281	17.5308	270.777	345.105
MS*Running	1	0		13	332.989	53.757	14.9096	300.504	365.475
MS*Running	1	1		16	329.744	64.072	16.0180	295.602	363.886
MS*Lesion	0	0		17	304.411	71.050	17.2321	267.880	340.941
MS*Lesion	0	1		15	348.296	80.740	20.8472	303.583	393.009
MS*Lesion	1	0		15	345.439	63.954	16.5130	310.022	380.856
MS*Lesion	1	1		14	315.941	50.206	13.4182	286.953	344.930
Running*Lesion	0	0		15	336.879	57.134	14.7521	305.239	368.519
Running*Lesion	0	1		13	341.547	83.153	23.0626	291.298	391.796
Running*Lesion	1	0		17	311.964	79.372	19.2505	271.155	352.774
Running*Lesion	1	1		16	325.469	55.850	13.9626	295.709	355.230
MS*Running*Les	0	0	0	8	332.837	57.987	20.5017	284.358	381.316
MS*Running*Les	0	0	1	7	357.391	106.042	40.0801	259.318	455.463
MS*Running*Les	0	1	0	9	279.143	75.017	25.0059	221.480	336.807
MS*Running*Les	0	1	1	8	340.339	56.961	20.1389	292.717	387.960
MS*Running*Les	1	0	0	7	341.498	60.391	22.8260	285.645	397.352
MS*Running*Les	1	0	1	6	323.062	48.367	19.7460	272.303	373.821
MS*Running*Les	1	1	0	8	348.888	70.888	25.0627	289.624	408.151
MS*Running*Les	1	1	1	8	310.600	54.168	19.1514	265.314	355.886

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Duration in open arms (s) Mean	1. Duration in open arms (s) Std.Dev.	1. Duration in open arms (s) Std.Err	1. Duration in open arms (s) -95.00%	1. Duration in open arms (s) +95.00%
Total				61	4.15300	5.75062	0.73629	2.6802	5.6258
MS	0			32	5.10416	6.62077	1.17039	2.7171	7.4912
MS	1			29	3.10345	4.48972	0.83372	1.3956	4.8112
Running	0			28	5.47619	6.62684	1.25235	2.9065	8.0458
Running	1			33	3.03030	4.70325	0.81873	1.3626	4.6980
Lesion	0			32	4.91146	6.68934	1.18252	2.4996	7.3232
Lesion	1			29	3.31609	4.46532	0.82919	1.6175	5.0146
MS*Running	0	0		15	7.60000	8.12154	2.09697	3.1024	12.0975
MS*Running	0	1		17	2.90196	4.02770	0.97686	0.8311	4.9728
MS*Running	1	0		13	3.02564	3.11645	0.86434	1.1423	4.9089
MS*Running	1	1		16	3.16666	5.46334	1.36583	0.2554	6.0778
MS*Lesion	0	0		17	5.71568	7.47281	1.81242	1.8735	9.5578
MS*Lesion	0	1		15	4.41111	5.68095	1.46681	1.2651	7.5571
MS*Lesion	1	0		15	4.00000	5.79545	1.49638	0.7905	7.2094
MS*Lesion	1	1		14	2.14285	2.30741	0.61668	0.8105	3.4751
Running*Lesion	0	0		15	6.07778	7.66973	1.98031	1.8304	10.3251
Running*Lesion	0	1		13	4.78205	5.40420	1.49885	1.5163	8.0477
Running*Lesion	1	0		17	3.88235	5.72936	1.38957	0.9365	6.8281
Running*Lesion	1	1		16	2.12499	3.23722	0.80930	0.4000	3.8499
MS*Running*Les	0	0	0	8	8.85416	9.21456	3.25784	1.1506	16.5577
MS*Running*Les	0	0	1	7	6.16666	7.09590	2.68199	-0.3959	12.7292
MS*Running*Les	0	1	0	9	2.92592	4.33422	1.44474	-0.4056	6.2575
MS*Running*Les	0	1	1	8	2.87499	3.95083	1.39683	-0.4279	6.1779
MS*Running*Les	1	0	0	7	2.90476	4.02177	1.52008	-0.8147	6.6242
MS*Running*Les	1	0	1	6	3.16666	1.96356	0.80162	1.1060	5.2273
MS*Running*Les	1	1	0	8	4.95833	7.14573	2.52639	-1.0156	10.9323
MS*Running*Les	1	1	1	8	1.37499	2.35828	0.83377	-0.5965	3.3465

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Frequency of entry into open arms Mean	1. Frequency of entry into open arms Std.Dev.	1. Frequency of entry into open arms Std.Err	1. Frequency of entry into open arms -95.00%	1. Frequency of entry into open arms +95.00%
Total				61	1.49180	1.38591	0.17744	1.13685	1.84675
MS	0			32	1.68750	1.51204	0.26729	1.14234	2.23265
MS	1			29	1.27586	1.22172	0.22686	0.81114	1.74058
Running	0			28	1.82142	1.24880	0.23600	1.33719	2.30566
Running	1			33	1.21212	1.45253	0.25285	0.69707	1.72716
Lesion	0			32	1.59375	1.34066	0.23699	1.11038	2.07711
Lesion	1			29	1.37931	1.44947	0.26916	0.82795	1.93066
MS*Running	0	0		15	2.06666	1.48644	0.38379	1.24350	2.88983
MS*Running	0	1		17	1.35294	1.49754	0.36320	0.58297	2.12290
MS*Running	1	0		13	1.53846	0.87705	0.24325	1.00846	2.06846
MS*Running	1	1		16	1.06250	1.43614	0.35903	0.29723	1.82776
MS*Lesion	0	0		17	1.70588	1.31171	0.31813	1.03146	2.38030
MS*Lesion	0	1		15	1.66666	1.75932	0.45425	0.69238	2.64095
MS*Lesion	1	0		15	1.46666	1.40746	0.36340	0.68724	2.24609
MS*Lesion	1	1		14	1.07142	0.99724	0.26652	0.49563	1.64722
Running*Lesion	0	0		15	1.73333	1.16291	0.30026	1.08933	2.37733
Running*Lesion	0	1		13	1.92307	1.38212	0.38333	1.08787	2.75828
Running*Lesion	1	0		17	1.47058	1.50489	0.36499	0.69684	2.24433
Running*Lesion	1	1		16	0.93750	1.38894	0.34723	0.19738	1.67761
MS*Running*Les	0	0	0	8	1.87500	1.35620	0.47949	0.74118	3.00881
MS*Running*Les	0	0	1	7	2.28571	1.70433	0.64417	0.70946	3.86196
MS*Running*Les	0	1	0	9	1.55555	1.33333	0.44444	0.53066	2.58044
MS*Running*Les	0	1	1	8	1.12500	1.72688	0.61054	-0.31871	2.56871
MS*Running*Les	1	0	0	7	1.57142	0.97590	0.36885	0.66887	2.47398
MS*Running*Les	1	0	1	6	1.50000	0.83666	0.34156	0.62197	2.37802
MS*Running*Les	1	1	0	8	1.37500	1.76776	0.62500	-0.10289	2.85289
MS*Running*Les	1	1	1	8	0.75000	1.03509	0.36596	-0.11536	1.61536

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Duration in closed arms (s) Mean	1. Duration in closed arms (s) Std.Dev.	1. Duration in closed arms (s) Std.Err	1. Duration in closed arms (s) -95.00%	1. Duration in closed arms (s) +95.00%
Total				61	35.2049	8.24730	1.05595	33.0926	37.3171
MS	0			32	34.5833	8.51721	1.50564	31.5125	37.6541
MS	1			29	35.8908	8.03171	1.49145	32.8357	38.9459
Running	0			28	33.7916	8.06131	1.52344	30.6658	36.9175
Running	1			33	36.4040	8.33500	1.45093	33.4485	39.3595
Lesion	0			32	33.9010	8.52940	1.50779	30.8258	36.9762
Lesion	1			29	36.6436	7.81795	1.45175	33.6698	39.6174
MS*Running	0	0		15	31.8333	8.57251	2.21341	27.0860	36.5806
MS*Running	0	1		17	37.0098	7.93123	1.92360	32.9319	41.0876
MS*Running	1	0		13	36.0512	7.08198	1.96419	31.7716	40.3308
MS*Running	1	1		16	35.7604	8.95833	2.23958	30.9868	40.5339
MS*Lesion	0	0		17	33.3039	8.91340	2.16181	28.7210	37.8867
MS*Lesion	0	1		15	36.0333	8.09889	2.09112	31.5483	40.5183
MS*Lesion	1	0		15	34.5777	8.32877	2.15048	29.9654	39.1901
MS*Lesion	1	1		14	37.2976	7.75345	2.07219	32.8209	41.7743
Running*Lesion	0	0		15	32.3111	8.14522	2.10308	27.8004	36.8217
Running*Lesion	0	1		13	35.5000	7.93171	2.19986	30.7069	40.2930
Running*Lesion	1	0		17	35.3039	8.85673	2.14807	30.7502	39.8576
Running*Lesion	1	1		16	37.5729	7.85539	1.96384	33.3870	41.7587
MS*Running*Les	0	0	0	8	29.9791	8.40607	2.97199	22.9515	37.0068
MS*Running*Les	0	0	1	7	33.9523	8.90001	3.36389	25.7212	42.1835
MS*Running*Les	0	1	0	9	36.2592	8.72859	2.90953	29.5498	42.9686
MS*Running*Les	0	1	1	8	37.8541	7.42766	2.62607	31.6444	44.0638
MS*Running*Les	1	0	0	7	34.9761	7.53843	2.84926	28.0042	41.9480
MS*Running*Les	1	0	1	6	37.3055	6.97647	2.84813	29.9841	44.6269
MS*Running*Les	1	1	0	8	34.2291	9.47257	3.34906	26.3098	42.1484
MS*Running*Les	1	1	1	8	37.2916	8.76806	3.09997	29.9613	44.6219

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	1. Duration in centra square (s) Mean	1. Duration in centra square (s) Std.Dev.	1. Duration in centra square (s) Std.Err	1. Duration in centra square (s) -95.00%	1. Duration in centra square (s) +95.00%
Total				61	9.6420	5.67163	0.72617	8.18950	11.0946
MS	0			32	9.3125	4.97624	0.87968	7.51837	11.1066
MS	1			29	10.0057	6.42284	1.19269	7.56262	12.4488
Running	0			28	9.7321	5.44243	1.02852	7.62179	11.8425
Running	1			33	9.5656	5.94213	1.03439	7.45866	11.6726
Lesion	0			32	10.1875	6.01487	1.06329	8.01890	12.3561
Lesion	1			29	9.0402	5.30660	0.98541	7.02170	11.0587
MS*Running	0	0		15	9.5666	3.82908	0.98866	7.44619	11.6871
MS*Running	0	1		17	9.0882	5.91904	1.43558	6.04494	12.1315
MS*Running	1	0		13	9.9230	7.03319	1.95065	5.67295	14.1731
MS*Running	1	1		16	10.0729	6.11736	1.52934	6.81320	13.3326
MS*Lesion	0	0		17	9.9803	5.69626	1.38154	7.05164	12.9091
MS*Lesion	0	1		15	8.5555	4.07356	1.05179	6.29969	10.8114
MS*Lesion	1	0		15	10.4222	6.55104	1.69147	6.79437	14.0500
MS*Lesion	1	1		14	9.5595	6.49773	1.73659	5.80784	13.3112
Running*Lesion	0	0		15	10.6111	6.26202	1.61684	7.14332	14.0789
Running*Lesion	0	1		13	8.7179	4.33781	1.20309	6.09663	11.3392
Running*Lesion	1	0		17	9.8137	5.95553	1.44442	6.75167	12.8757
Running*Lesion	1	1		16	9.3020	6.11137	1.52784	6.04556	12.5586
MS*Running*Les	0	0	0	8	10.1666	4.30115	1.52068	6.57081	13.7625
MS*Running*Les	0	0	1	7	8.8809	3.40576	1.28725	5.73115	12.0307
MS*Running*Les	0	1	0	9	9.8148	6.97437	2.32479	4.45383	15.1757
MS*Running*Les	0	1	1	8	8.2708	4.80074	1.69731	4.25731	12.2843
MS*Running*Les	1	0	0	7	11.1190	8.32762	3.14754	3.41728	18.8208
MS*Running*Les	1	0	1	6	8.5277	5.58212	2.27889	2.66969	14.3858
MS*Running*Les	1	1	0	8	9.8125	5.04774	1.78464	5.59248	14.0325
MS*Running*Les	1	1	1	8	10.3333	7.38617	2.61140	4.15834	16.5083

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	1. Maximum velocity (cm/s) Mean	1. Maximum velocity (cm/s) Std.Dev.	1. Maximum velocity (cm/s) Std.Err	1. Maximum velocity (cm/s) -95.00%	1. Maximum velocity (cm/s) +95.00%
Total				61	39.7914	15.3451	1.9647	35.8614	43.7215
MS	0			32	38.7876	8.6673	1.5321	35.6627	41.9125
MS	1			29	40.8991	20.4693	3.8010	33.1130	48.6852
Running	0			28	39.8792	8.2892	1.5665	36.6649	43.0934
Running	1			33	39.7170	19.5838	3.4091	32.7729	46.6611
Lesion	0			32	37.4526	7.5965	1.3429	34.7138	40.1915
Lesion	1			29	42.3722	20.6771	3.8396	34.5070	50.2374
MS*Running	0	0		15	40.5546	9.5791	2.4733	35.2498	45.8593
MS*Running	0	1		17	37.2285	7.7299	1.8747	33.2542	41.2029
MS*Running	1	0		13	39.0999	6.8059	1.8876	34.9871	43.2127
MS*Running	1	1		16	42.3610	27.2025	6.8006	27.8658	56.8562
MS*Lesion	0	0		17	37.0099	8.2091	1.9910	32.7891	41.2307
MS*Lesion	0	1		15	40.8023	9.0077	2.3257	35.8140	45.7907
MS*Lesion	1	0		15	37.9543	7.0891	1.8304	34.0285	41.8802
MS*Lesion	1	1		14	44.0542	28.7680	7.6885	27.4441	60.6644
Running*Lesion	0	0		15	39.3218	6.9996	1.8073	35.4456	43.1981
Running*Lesion	0	1		13	40.5223	9.8288	2.7260	34.5828	46.4618
Running*Lesion	1	0		17	35.8033	7.9229	1.9216	31.7297	39.8769
Running*Lesion	1	1		16	43.8753	26.7474	6.6868	29.6226	58.1280
MS*Running*Les	0	0	0	8	39.1106	7.0675	2.4987	33.2020	45.0192
MS*Running*Les	0	0	1	7	42.2048	12.2423	4.6271	30.8825	53.5271
MS*Running*Les	0	1	0	9	35.1426	9.0961	3.0320	28.1507	42.1345
MS*Running*Les	0	1	1	8	39.5752	5.4888	1.9405	34.9865	44.1640
MS*Running*Les	1	0	0	7	39.5632	7.4779	2.8263	32.6473	46.4792
MS*Running*Les	1	0	1	6	38.5593	6.5890	2.6899	31.6445	45.4741
MS*Running*Les	1	1	0	8	36.5466	6.9086	2.4425	30.7708	42.3223
MS*Running*Les	1	1	1	8	48.1753	38.2186	13.5123	16.2237	80.1269

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	1. Mean velocity (cm/s) Mean	1. Mean velocity (cm/s) Std.Dev.	1. Mean velocity (cm/s) Std.Err	1. Mean velocity (cm/s) -95.00%	1. Mean velocity (cm/s) +95.00%
Total				61	6.69261	1.40482	0.17986	6.33282	7.05240
MS	0			32	6.63230	1.58668	0.28048	6.06024	7.20436
MS	1			29	6.75917	1.19705	0.22228	6.30383	7.21450
Running	0			28	6.91932	1.40969	0.26640	6.37269	7.46594
Running	1			33	6.50026	1.39301	0.24249	6.00631	6.99420
Lesion	0			32	6.60497	1.42643	0.25216	6.09068	7.11925
Lesion	1			29	6.78932	1.39920	0.25982	6.25710	7.32155
MS*Running	0	0		15	7.02644	1.66565	0.43006	6.10404	7.94885
MS*Running	0	1		17	6.28452	1.47513	0.35777	5.52607	7.04297
MS*Running	1	0		13	6.79571	1.09709	0.30427	6.13274	7.45867
MS*Running	1	1		16	6.72948	1.30760	0.32690	6.03271	7.42625
MS*Lesion	0	0		17	6.21248	1.45000	0.35167	5.46695	6.95800
MS*Lesion	0	1		15	7.10809	1.64777	0.42545	6.19559	8.02060
MS*Lesion	1	0		15	7.04979	1.30519	0.33700	6.32699	7.77258
MS*Lesion	1	1		14	6.44779	1.02462	0.27384	5.85618	7.03939
Running*Lesion	0	0		15	6.87509	1.16601	0.30106	6.22937	7.52080
Running*Lesion	0	1		13	6.97035	1.69701	0.47066	5.94486	7.99584
Running*Lesion	1	0		17	6.36662	1.61983	0.39286	5.53378	7.19947
Running*Lesion	1	1		16	6.64224	1.13980	0.28495	6.03488	7.24960
MS*Running*Les	0	0	0	8	6.79260	1.18342	0.41840	5.80323	7.78196
MS*Running*Les	0	0	1	7	7.29369	2.16412	0.81796	5.29221	9.29518
MS*Running*Les	0	1	0	9	5.69681	1.53097	0.51032	4.52000	6.87362
MS*Running*Les	0	1	1	8	6.94569	1.16248	0.41099	5.97383	7.91755
MS*Running*Les	1	0	0	7	6.96936	1.23248	0.46583	5.82950	8.10923
MS*Running*Les	1	0	1	6	6.59311	0.98709	0.40298	5.55722	7.62901
MS*Running*Les	1	1	0	8	7.12016	1.44669	0.51148	5.91069	8.32963
MS*Running*Les	1	1	1	8	6.33879	1.10548	0.39084	5.41459	7.26300

A5.1.5.2.2.1.3. EPM P63 1 minute intervals 1st interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 1. Total distance (cm) (EPM P63 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	652256	1	652256	1393.72	0.00000
MS	193	1	193	0.041	0.83971
Running	5405	1	5405	1.155	0.28737
Lesion	792	1	792	0.169	0.68241
MS*Running	4055	1	4055	0.867	0.35613
MS*Lesion	19086	1	19086	4.078	0.04850
Running*Lesion	265	1	265	0.057	0.81279
MS*Running*Lesion	3001	1	3001	0.641	0.42684
Error	248037	53	4680		

A5.1.5.2.2.1.4. EPM P63 1 minute intervals 1st interval Distance Travelled post hoc Newman Keuls test (MS*Lesion)

Cell No.	MS	Lesion	{1} 304.41	{2} 348.30	{3} 345.44	{4} 315.94
Newman-Keuls test; variable 1. Total distance (cm) (EPM P63 1 min tim						
Approximate Probabilities for Post Hoc Tests						
Error: Between MS = 4679.9, df = 53.000						
1	0	0		0.300496	0.233314	0.644473
2	0	1	0.300496		0.908955	0.400021
3	1	0	0.233314	0.908955		0.240307
4	1	1	0.644473	0.400021	0.240307	

A5.1.5.2.2.1.5. EPM P63 1 minute intervals 1st interval Open Arm Duration ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 1. Duration in open arms (s) (EPM P63					
Sigma-restricted parameterization					
Effective hypothesis decomposition					
Intercept	1038.09	1	1038.09	32.9710	0.00000
MS	66.616	1	66.616	2.1158	0.15168
Running	75.455	1	75.455	2.3965	0.12755
Lesion	34.530	1	34.530	1.0967	0.29974
MS*Running	84.537	1	84.537	2.6850	0.10722
MS*Lesion	0.320	1	0.320	0.0101	0.92012
Running*Lesion	1.374	1	1.374	0.0436	0.83534
MS*Running*Lesion	39.506	1	39.506	1.2547	0.26769
Error	1668.70	53	31.485		

A5.1.5.2.2.1.6. EPM P63 1 minute intervals 1st interval Open Arm Frequency ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 1. Frequency of entry into open arms (					
Sigma-restricted parameterization					
Effective hypothesis decomposition					
Intercept	136.255	1	136.255	69.4443	0.00000
MS	2.544	1	2.544	1.2965	0.25996
Running	5.536	1	5.536	2.8219	0.09887
Lesion	0.482	1	0.482	0.2458	0.62204
MS*Running	0.267	1	0.267	0.1365	0.71323
MS*Lesion	0.430	1	0.430	0.2193	0.64143
Running*Lesion	1.829	1	1.829	0.9323	0.33862
MS*Running*Lesion	0.077	1	0.077	0.0396	0.84289
Error	103.990	53	1.962		

A5.1.5.2.2.1.7. EPM P63 1 minute intervals 1st interval Closed Arm Duration ANOVA

Effect	Univariate Tests of Significance for 1. Duration in closed arms (s) (EPM P6 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	74695.4	1	74695.4	1065.30	0.00000
MS	31.17	1	31.17	0.445	0.50782
Running	83.46	1	83.46	1.190	0.28021
Lesion	112.95	1	112.95	1.611	0.20991
MS*Running	112.60	1	112.60	1.606	0.21061
MS*Lesion	0.03	1	0.03	0.000	0.98379
Running*Lesion	2.55	1	2.55	0.036	0.84963
MS*Running*Lesion	9.10	1	9.10	0.130	0.72004
Error	3716.18	53	70.12		

A5.1.5.2.2.1.8. EPM P63 1 minute intervals 1st interval Central Square Duration ANOVA

Effect	Univariate Tests of Significance for 1. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	5564.31	1	5564.31	156.724	0.00000
MS	6.650	1	6.650	0.187	0.66692
Running	0.202	1	0.202	0.005	0.94022
Lesion	22.578	1	22.578	0.635	0.42874
MS*Running	2.007	1	2.007	0.056	0.81298
MS*Lesion	0.542	1	0.542	0.015	0.90213
Running*Lesion	7.658	1	7.658	0.215	0.64423
MS*Running*Lesion	10.681	1	10.681	0.300	0.58565
Error	1881.70	53	35.50		

A5.1.5.2.2.1.9. EPM P63 1 minute intervals 1st interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 1. Maximum velocity (cm/s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	95612.5	1	95612.5	382.939	0.00000
MS	43.62	1	43.62	0.174	0.67764
Running	0.00	1	0.00	0.000	1.00000
Lesion	309.81	1	309.81	1.240	0.27033
MS*Running	163.76	1	163.76	0.655	0.42163
MS*Lesion	9.03	1	9.03	0.036	0.84993
Running*Lesion	183.54	1	183.54	0.735	0.39509
MS*Running*Lesion	119.94	1	119.94	0.480	0.49127
Error	13233.0	53	249.68		

A5.1.5.2.2.1.10. EPM P63 1 minute intervals 1st interval Mean Velocity ANOVA

	Univariate Tests of Significance for 1. Mean velocity (cm/s) (EPM P63 1 m Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	2716.60	1	2716.60	1393.72	0.00000
MS	0.081	1	0.081	0.041	0.83971
Running	2.251	1	2.251	1.155	0.28737
Lesion	0.330	1	0.330	0.169	0.68241
MS*Running	1.689	1	1.689	0.867	0.35613
MS*Lesion	7.949	1	7.949	4.078	0.04850
Running*Lesion	0.110	1	0.110	0.057	0.81279
MS*Running*Lesion	1.250	1	1.250	0.641	0.42684
Error	103.306	53	1.949		

A5.1.5.2.2.1.11. EPM P63 1 minute intervals 1st interval Mean Velocity post hoc Newman Keuls test (MS*Lesion)

	Newman-Keuls test; variable 1. Mean velocity (cm/s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.9492, df = 53.000					
Cell No.	MS	Lesion	{1} 6.2125	{2} 7.1081	{3} 7.0498	{4} 6.4478
1	0	0		0.300496	0.233314	0.644473
2	0	1	0.300496		0.908955	0.400021
3	1	0	0.233314	0.908955		0.240307
4	1	1	0.644473	0.400021	0.240307	

A5.1.5.2.2.2.1. EPM P63 1 minute intervals 2nd interval Descriptive Statistics

	Descriptive Statistics (EPM P63 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	2. Total distance (cm) Mean	2. Total distance (cm) Std.Dev.	2. Total distance (cm) Std.Err	2. Total distance (cm) -95.00%	2. Total distance (cm) +95.00%
Total				61	194.000	62.5405	8.0074	177.983	210.018
MS	0			32	174.602	61.8368	10.9313	152.307	196.896
MS	1			29	215.406	56.9497	10.5753	193.743	237.068
Running	0			28	213.137	52.8300	9.9839	192.652	233.623
Running	1			33	177.763	66.2302	11.5292	154.278	201.247
Lesion	0			32	197.837	65.0955	11.5073	174.367	221.306
Lesion	1			29	189.767	60.4529	11.2258	166.772	212.762
MS*Running	0	0		15	195.376	59.8754	15.4597	162.218	228.534
MS*Running	0	1		17	156.271	59.2458	14.3692	125.810	186.733
MS*Running	1	0		13	233.632	35.3248	9.7973	212.285	254.978
MS*Running	1	1		16	200.597	67.3352	16.8338	164.717	236.478
MS*Lesion	0	0		17	171.586	63.0342	15.2880	139.177	203.996
MS*Lesion	0	1		15	178.019	62.4699	16.1296	143.424	212.614
MS*Lesion	1	0		15	227.587	55.2890	14.2755	196.969	258.206
MS*Lesion	1	1		14	202.354	57.7824	15.4430	168.991	235.716
Running*Lesion	0	0		15	216.315	61.6122	15.9082	182.196	250.435
Running*Lesion	0	1		13	209.471	42.7066	11.8446	183.663	235.278
Running*Lesion	1	0		17	181.532	65.4667	15.8780	147.872	215.192
Running*Lesion	1	1		16	173.757	68.9412	17.2353	137.021	210.494
MS*Running*Les	0	0	0	8	198.567	69.1793	24.4585	140.732	256.403
MS*Running*Les	0	0	1	7	191.729	52.4658	19.8302	143.206	240.251
MS*Running*Les	0	1	0	9	147.603	48.8264	16.2754	110.072	185.135
MS*Running*Les	0	1	1	8	166.023	71.3662	25.2317	106.359	225.687
MS*Running*Les	1	0	0	7	236.599	48.7245	18.4161	191.536	281.662
MS*Running*Les	1	0	1	6	230.170	10.9188	4.4576	218.711	241.628
MS*Running*Les	1	1	0	8	219.702	62.6624	22.1545	167.315	272.089
MS*Running*Les	1	1	1	8	181.492	70.3911	24.8870	122.643	240.340

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Duration in open arms (s) Mean	2. Duration in open arms (s) Std.Dev.	2. Duration in open arms (s) Std.Err	2. Duration in open arms (s) -95.00%	2. Duration in open arms (s) +95.00%
Total				61	2.91256	7.2314(	0.92588(	1.0605:	4.7646:
MS	0			32	3.09895(	8.5576:	1.51278	0.0136:	6.1843:
MS	1			29	2.70689(	5.5582!	1.03214(	0.5926!	4.8211-
Running	0			28	3.19642(	6.2361(	1.17851:	0.7783:	5.6145:
Running	1			33	2.67171(	8.0688!	1.40461:	-0.1893!	5.5328:
Lesion	0			32	3.01562:	6.1363-	1.08476:	0.8032:	5.2280:
Lesion	1			29	2.79884(	8.3870:	1.55743(	-0.3914(	5.9891(
MS*Running	0	0		15	2.31110(	5.4909:	1.41775(	-0.7296:	5.3518!
MS*Running	0	1		17	3.79411:	10.6963-	2.59424:	-1.7054:	9.2936:
MS*Running	1	0		13	4.21794(	7.0862:	1.96536(	-0.0642:	8.5001:
MS*Running	1	1		16	1.47916!	3.7296!	0.93242:	-0.5082!	3.4665!
MS*Lesion	0	0		17	2.06862:	5.1807!	1.25652:	-0.5950!	4.7323:
MS*Lesion	0	1		15	4.26666(	11.3460!	2.92954!	-2.0165!	10.5499.
MS*Lesion	1	0		15	4.08888(	7.0979:	1.83267:	0.1582(	8.0195!
MS*Lesion	1	1		14	1.22618(	2.7785!	0.74260:	-0.3781:	2.8304!
Running*Lesion	0	0		15	5.05555-	7.8764-	2.03368!	0.6937:	9.4173!
Running*Lesion	0	1		13	1.05127(	2.4117(	0.66890.	-0.4061:	2.5086!
Running*Lesion	1	0		17	1.21568-	3.3658(	0.81634.	-0.5148!	2.9462!
Running*Lesion	1	1		16	4.21875.	11.0387!	2.75969!	-1.6634(	10.1009(
MS*Running*Lesi	0	0	0	8	3.52082:	7.2727:	2.57129:	-2.5593:	9.6009:
MS*Running*Lesi	0	0	1	7	0.92856(	2.1122(	0.79835!	-1.0249!	2.8820!
MS*Running*Lesi	0	1	0	9	0.77777!	1.8484:	0.61614.	-0.6430!	2.1986(
MS*Running*Lesi	0	1	1	8	7.18750:	15.2561-	5.39385!	-5.5669!	19.9419!
MS*Running*Lesi	1	0	0	7	6.80952:	8.7360!	3.30191:	-1.2699:	14.8890:
MS*Running*Lesi	1	0	1	6	1.19444.	2.9257:	1.19444.	-1.8759:	4.2648!
MS*Running*Lesi	1	1	0	8	1.70833(	4.6331(	1.63807(	-2.1650!	5.5817!
MS*Running*Lesi	1	1	1	8	1.25000(	2.8674-	1.01379:	-1.1472-	3.6472-

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	2. Frequency of entry into open arms Mean	2. Frequency of entry into open arms Std.Dev.	2. Frequency of entry into open arms Std.Err	2. Frequency of entry into open arms -95.00%	2. Frequency of entry into open arms +95.00%
Total				61	0.72131	1.15659	0.14808	0.42509	1.01752
MS	0			32	0.65625	0.86544	0.15299	0.34422	0.96827
MS	1			29	0.79310	1.42376	0.26438	0.25153	1.33467
Running	0			28	0.82142	1.24880	0.23600	0.33719	1.30566
Running	1			33	0.63636	1.08449	0.18878	0.25181	1.02091
Lesion	0			32	0.90625	1.37628	0.24329	0.41004	1.40245
Lesion	1			29	0.51724	0.82897	0.15393	0.20191	0.83256
MS*Running	0	0		15	0.66666	1.04653	0.27021	0.08711	1.24621
MS*Running	0	1		17	0.64705	0.70188	0.17023	0.28618	1.00793
MS*Running	1	0		13	1.00000	1.47196	0.40824	0.11050	1.88949
MS*Running	1	1		16	0.62500	1.40830	0.35207	-0.12543	1.37543
MS*Lesion	0	0		17	0.70588	0.98518	0.23894	0.19934	1.21241
MS*Lesion	0	1		15	0.60000	0.73678	0.19023	0.19198	1.00802
MS*Lesion	1	0		15	1.13333	1.72654	0.44579	0.17720	2.08946
MS*Lesion	1	1		14	0.42857	0.93761	0.25058	-0.11279	0.96993
Running*Lesion	0	0		15	1.26666	1.48644	0.38379	0.44350	2.08983
Running*Lesion	0	1		13	0.30769	0.63042	0.17484	-0.07327	0.68865
Running*Lesion	1	0		17	0.58823	1.22774	0.29777	-0.04301	1.21948
Running*Lesion	1	1		16	0.68750	0.94648	0.23662	0.18315	1.19184
MS*Running*Les	0	0	0	8	1.00000	1.30930	0.46291	-0.09460	2.09460
MS*Running*Les	0	0	1	7	0.28571	0.48795	0.18442	-0.16556	0.73699
MS*Running*Les	0	1	0	9	0.44444	0.52704	0.17568	0.03932	0.84956
MS*Running*Les	0	1	1	8	0.87500	0.83452	0.29504	0.17732	1.57267
MS*Running*Les	1	0	0	7	1.57142	1.71824	0.64943	-0.01768	3.16054
MS*Running*Les	1	0	1	6	0.33333	0.81649	0.33333	-0.52352	1.19019
MS*Running*Les	1	1	0	8	0.75000	1.75254	0.61962	-0.71516	2.21516
MS*Running*Les	1	1	1	8	0.50000	1.06904	0.37796	-0.39374	1.39374

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Duration in closed arms (s) Mean	2. Duration in closed arms (s) Std.Dev.	2. Duration in closed arms (s) Std.Err	2. Duration in closed arms (s) -95.00%	2. Duration in closed arms (s) +95.00%
Total				61	35.7185	12.7483	1.63225	32.4535	38.9835
MS	0			32	34.4635	13.8543	2.44912	29.4685	39.4585
MS	1			29	37.1034	11.4875	2.13317	32.7338	41.4730
Running	0			28	34.5833	12.0038	2.26850	29.9287	39.2379
Running	1			33	36.6818	13.4559	2.34238	31.9105	41.4531
Lesion	0			32	35.2239	11.5397	2.03995	31.0634	39.3844
Lesion	1			29	36.2643	14.1504	2.62767	30.8818	41.6469
MS*Running	0	0		15	35.0555	12.7342	3.28797	28.0035	42.1075
MS*Running	0	1		17	33.9411	15.1452	3.67326	26.1542	41.7281
MS*Running	1	0		13	34.0384	11.5938	3.21555	27.0323	41.0445
MS*Running	1	1		16	39.5937	11.1373	2.78433	33.6590	45.5284
MS*Lesion	0	0		17	36.0392	11.1609	2.70693	30.3007	41.7776
MS*Lesion	0	1		15	32.6777	16.6198	4.29123	23.4740	41.8815
MS*Lesion	1	0		15	34.3000	12.2793	3.17051	27.4999	41.1000
MS*Lesion	1	1		14	40.1071	10.1519	2.71322	34.2455	45.9687
Running*Lesion	0	0		15	29.7555	11.5411	2.97990	23.3642	36.1468
Running*Lesion	0	1		13	40.1538	10.2984	2.85627	33.9305	46.3771
Running*Lesion	1	0		17	40.0490	9.4175	2.28408	35.2069	44.8910
Running*Lesion	1	1		16	33.1041	16.2838	4.07095	24.4271	41.7812
MS*Running*Les	0	0	0	8	31.2291	12.7363	4.50296	20.5813	41.8770
MS*Running*Les	0	0	1	7	39.4285	12.1365	4.58717	28.2041	50.6529
MS*Running*Les	0	1	0	9	40.3148	7.9684	2.65614	34.1897	46.4399
MS*Running*Les	0	1	1	8	26.7708	18.4590	6.52626	11.3386	42.2030
MS*Running*Les	1	0	0	7	28.0714	10.7396	4.05921	18.1388	38.0039
MS*Running*Les	1	0	1	6	41.0000	8.7286	3.56344	31.8398	50.1601
MS*Running*Les	1	1	0	8	39.7500	11.4000	4.03051	30.2193	49.2806
MS*Running*Les	1	1	1	8	39.4375	11.6527	4.11985	29.6956	49.1794

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Duration in central square (s) Mean	2. Duration in central square (s) Std.Dev.	2. Duration in central square (s) Std.Err	2. Duration in central square (s) -95.00%	2. Duration in centra square (s) +95.00%
Total				61	10.3688	10.4096	1.33281	7.7028	13.0348
MS	0			32	11.4375	11.4000	2.01526	7.3273	15.5476
MS	1			29	9.1896	9.2503	1.71774	5.6710	12.7083
Running	0			28	11.2202	9.8683	1.86494	7.3936	15.0467
Running	1			33	9.6464	10.9469	1.90561	5.7648	13.5280
Lesion	0			32	10.7604	9.6658	1.70869	7.2755	14.2453
Lesion	1			29	9.9367	11.3310	2.10413	5.6266	14.2469
MS*Running	0	0		15	11.6333	11.0139	2.84378	5.5340	17.7326
MS*Running	0	1		17	11.2647	12.0660	2.92645	5.0608	17.4685
MS*Running	1	0		13	10.7435	8.7825	2.43582	5.4363	16.0508
MS*Running	1	1		16	7.9270	9.7071	2.42679	2.7544	13.0996
MS*Lesion	0	0		17	10.8921	9.8292	2.38394	5.8384	15.9458
MS*Lesion	0	1		15	12.0555	13.2885	3.43109	4.6965	19.4145
MS*Lesion	1	0		15	10.6111	9.8191	2.53528	5.1734	16.0487
MS*Lesion	1	1		14	7.6666	8.6971	2.32442	2.6450	12.6882
Running*Lesion	0	0		15	14.1888	10.2623	2.64973	8.5057	19.8720
Running*Lesion	0	1		13	7.7948	8.5158	2.36186	2.6488	12.9409
Running*Lesion	1	0		17	7.7352	8.2535	2.00178	3.4916	11.9788
Running*Lesion	1	1		16	11.6770	13.2078	3.30195	4.6391	18.7150
MS*Running*Les	0	0	0	8	14.2500	11.4094	4.03383	4.7115	23.7885
MS*Running*Les	0	0	1	7	8.6428	10.5648	3.99312	-1.1279	18.4136
MS*Running*Les	0	1	0	9	7.9074	7.6176	2.53921	2.0519	13.7628
MS*Running*Les	0	1	1	8	15.0416	15.3513	5.42753	2.2075	27.8757
MS*Running*Les	1	0	0	7	14.1190	9.6880	3.66173	5.1591	23.0789
MS*Running*Les	1	0	1	6	6.8055	6.1584	2.51418	0.3426	13.2684
MS*Running*Les	1	1	0	8	7.5416	9.4502	3.34117	-0.3589	15.4422
MS*Running*Les	1	1	1	8	8.3125	10.5959	3.74622	-0.5459	17.1709

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	2. Maximum velocity (cm/s) Mean	2. Maximum velocity (cm/s) Std.Dev.	2. Maximum velocity (cm/s) Std.Err	2. Maximum velocity (cm/s) -95.00%	2. Maximum velocity (cm/s) +95.00%
Total				61	31.4207	12.7105	1.6274	28.1653	34.6760
MS	0			32	28.7549	7.8434	1.3865	25.9271	31.5828
MS	1			29	34.3621	16.1556	3.0000	28.2169	40.5074
Running	0			28	32.1851	6.2595	1.1829	29.7579	34.6124
Running	1			33	30.7720	16.3987	2.8546	24.9573	36.5867
Lesion	0			32	29.8173	7.0273	1.2422	27.2837	32.3510
Lesion	1			29	33.1898	16.8920	3.1367	26.7644	39.6152
MS*Running	0	0		15	32.9357	7.0155	1.8114	29.0506	36.8207
MS*Running	0	1		17	25.0660	6.7292	1.6320	21.6062	28.5259
MS*Running	1	0		13	31.3191	5.4059	1.4993	28.0524	34.5859
MS*Running	1	1		16	36.8346	21.1963	5.2990	25.5398	48.1293
MS*Lesion	0	0		17	27.8355	7.2832	1.7664	24.0908	31.5802
MS*Lesion	0	1		15	29.7969	8.5678	2.2122	25.0522	34.5416
MS*Lesion	1	0		15	32.0634	6.2090	1.6031	28.6249	35.5019
MS*Lesion	1	1		14	36.8251	22.5392	6.0238	23.8113	49.8388
Running*Lesion	0	0		15	30.6574	6.5638	1.6947	27.0225	34.2923
Running*Lesion	0	1		13	33.9479	5.6225	1.5594	30.5503	37.3456
Running*Lesion	1	0		17	29.0761	7.5324	1.8268	25.2033	32.9489
Running*Lesion	1	1		16	32.5739	22.5043	5.6260	20.5821	44.5656
MS*Running*Les	0	0	0	8	31.3630	7.9887	2.8244	24.6843	38.0418
MS*Running*Les	0	0	1	7	34.7330	5.7721	2.1816	29.3946	40.0713
MS*Running*Les	0	1	0	9	24.7000	5.1714	1.7238	20.7248	28.6751
MS*Running*Les	0	1	1	8	25.4779	8.5190	3.0119	18.3558	32.6000
MS*Running*Les	1	0	0	7	29.8509	4.9648	1.8765	25.2592	34.4426
MS*Running*Les	1	0	1	6	33.0320	5.8325	2.3811	26.9111	39.1529
MS*Running*Les	1	1	0	8	33.9993	6.8410	2.4186	28.2800	39.7185
MS*Running*Les	1	1	1	8	39.6699	29.9595	10.5923	14.6230	64.7167

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	2. Mean velocity (cm/s) Mean	2. Mean velocity (cm/s) Std.Dev.	2. Mean velocity (cm/s) Std.Err	2. Mean velocity (cm/s) -95.00%	2. Mean velocity (cm/s) +95.00%
Total				61	3.95920	1.27633	0.16341	3.63231	4.28608
MS	0			32	3.56330	1.26197	0.22308	3.10831	4.01829
MS	1			29	4.39604	1.16224	0.21582	3.95395	4.83813
Running	0			28	4.34975	1.07816	0.20375	3.93168	4.76782
Running	1			33	3.62781	1.35163	0.23529	3.14854	4.10708
Lesion	0			32	4.03749	1.32848	0.23484	3.55852	4.51646
Lesion	1			29	3.87280	1.23373	0.22909	3.40351	4.34208
MS*Running	0	0		15	3.98727	1.22194	0.31550	3.31057	4.66396
MS*Running	0	1		17	3.18922	1.20910	0.29325	2.56756	3.81088
MS*Running	1	0		13	4.76800	0.72091	0.19994	4.33235	5.20364
MS*Running	1	1		16	4.09383	1.37419	0.34354	3.36157	4.82608
MS*Lesion	0	0		17	3.50177	1.28641	0.31200	2.84035	4.16318
MS*Lesion	0	1		15	3.63304	1.27489	0.32917	2.92703	4.33906
MS*Lesion	1	0		15	4.64465	1.12834	0.29133	4.01979	5.26951
MS*Lesion	1	1		14	4.12968	1.17923	0.31516	3.44881	4.81055
Running*Lesion	0	0		15	4.41461	1.25739	0.32465	3.71828	5.11093
Running*Lesion	0	1		13	4.27492	0.87156	0.24172	3.74824	4.80160
Running*Lesion	1	0		17	3.70475	1.33605	0.32404	3.01781	4.39168
Running*Lesion	1	1		16	3.54607	1.40696	0.35174	2.79636	4.29579
MS*Running*Les	0	0	0	8	4.05240	1.41182	0.49915	2.87208	5.23271
MS*Running*Les	0	0	1	7	3.91283	1.07073	0.40469	2.92257	4.90309
MS*Running*Les	0	1	0	9	3.01232	0.99645	0.33215	2.24637	3.77827
MS*Running*Les	0	1	1	8	3.38823	1.45645	0.51493	2.17060	4.60585
MS*Running*Les	1	0	0	7	4.82856	0.99437	0.37584	3.90891	5.74820
MS*Running*Les	1	0	1	6	4.69735	0.22283	0.09097	4.46350	4.93120
MS*Running*Les	1	1	0	8	4.48373	1.27882	0.45213	3.41460	5.55285
MS*Running*Les	1	1	1	8	3.70392	1.43655	0.50789	2.50293	4.90491

A5.1.5.2.2.2.2. EPM P63 1 minute intervals 2nd interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 2. Total distance (cm) (EPM P63 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	232332	1	232332	677.496	0.00000
MS	2530	1	2530	7.3785	0.00889
Running	1902	1	1902	5.5479	0.02223
Lesion	102	1	102	0.2997	0.58638
MS*Running	11	1	11	0.0338	0.85493
MS*Lesion	297	1	297	0.8667	0.35610
Running*Lesion	40	1	40	0.0117	0.91439
MS*Running*Lesion	305	1	305	0.8921	0.34919
Error	18175	53	342		

A5.1.5.2.2.2.3. EPM P63 1 minute intervals 2nd interval Distance Travelled post hoc Newman Keuls test (MS effect)

	Newman-Keuls test; variable 2. Total distance (cm) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 3429.3, df = 53.000		
Cell No.	MS	{1} 174.60	{2} 215.41
1	0		0.008983
2	1	0.008983	

A5.1.5.2.2.2.4. EPM P63 1 minute intervals 2nd interval Distance Travelled post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 2. Total distance (cm) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 3429.3, df = 53.000		
Cell No.	Running	{1} 213.14	{2} 177.76
1	0		0.022579
2	1	0.022579	

A5.1.5.2.2.2.5. EPM P63 1 minute intervals 2nd interval Open Arm Duration ANOVA

	Univariate Tests of Significance for 2. Duration in open arms (s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	513.85	1	513.856	9.85993	0.00276
MS	1.983	1	1.983	0.03805	0.84607
Running	2.200	1	2.200	0.04222	0.83798
Lesion	4.785	1	4.785	0.09182	0.76305
MS*Running	68.924	1	68.923	1.32251	0.25530
MS*Lesion	91.989	1	91.989	1.76509	0.18968
Running*Lesion	188.502	1	188.501	3.61698	0.06263
MS*Running*Lesion	13.903	1	13.903	0.26677	0.60765
Error	2762.12	53	52.115		

A5.1.5.2.2.2.6. EPM P63 1 minute intervals 2nd interval Open Arm Frequency ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 2. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	31.1959	1	31.1959	23.2630	0.00001
MS	0.2840	1	0.2840	0.2118	0.64724
Running	0.3626	1	0.3626	0.2704	0.60520
Lesion	2.9519	1	2.9519	2.2012	0.14381
MS*Running	0.4457	1	0.4457	0.3323	0.56670
MS*Lesion	1.3639	1	1.3639	1.0170	0.31779
Running*Lesion	4.2778	1	4.2778	3.1900	0.07981
MS*Running*Lesion	0.0231	1	0.0231	0.0172	0.89607
Error	71.0734	53	1.3410		

A5.1.5.2.2.2.7. EPM P63 1 minute intervals 2nd interval Closed Arm Duration ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Univariate Tests of Significance for 2. Duration in closed arms (s) (EPM P6 Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	76913.9	1	76913.9	519.582	0.00000
MS	103.97	1	103.97	0.702	0.40574
Running	40.27	1	40.27	0.272	0.60415
Lesion	49.72	1	49.72	0.335	0.56468
MS*Running	176.18	1	176.18	1.190	0.28023
MS*Lesion	303.33	1	303.33	2.049	0.15816
Running*Lesion	1150.84	1	1150.84	7.774	0.00734
MS*Running*Lesion	67.97	1	67.97	0.459	0.50095
Error	7845.60	53	148.03		

A5.1.5.2.2.2.8. EPM P63 1 minute intervals 2nd interval Closed Arm Duration post hoc Newman Keuls test (Running*Lesion)

Cell No.	Running	Lesion	{1} 29.756	{2} 40.154	{3} 40.049	{4} 33.104
Newman-Keuls test; variable 2. Duration in closed arms (s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 148.03, df = 53.000						
1	0	0		0.100162	0.061098	0.453000
2	0	1	0.100162		0.981299	0.258019
3	1	0	0.061098	0.981299		0.122858
4	1	1	0.453000	0.258019	0.122858	

A5.1.5.2.2.2.9. EPM P63 1 minute intervals 2nd interval Central Square Duration ANOVA

Effect	Univariate Tests of Significance for 2. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	6418.64	1	6418.64	58.0660	0.00000
MS	77.237	1	77.237	0.6987	0.40696
Running	23.641	1	23.641	0.2138	0.64564
Lesion	23.654	1	23.654	0.2139	0.64555
MS*Running	24.713	1	24.713	0.2235	0.63827
MS*Lesion	61.233	1	61.233	0.5539	0.45999
Running*Lesion	407.818	1	407.818	3.6893	0.06014
MS*Running*Lesion	20.394	1	20.394	0.1844	0.66928
Error	5858.64	53	110.540		

A5.1.5.2.2.2.10. EPM P63 1 minute intervals 2nd interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Maximum velocity (cm/s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	60104.9	1	60104.9	383.930	0.00000
MS	386.66	1	386.66	2.4698	0.12200
Running	24.76	1	24.76	0.1582	0.69242
Lesion	158.90	1	158.90	1.0150	0.31828
MS*Running	670.55	1	670.55	4.2832	0.04338
MS*Lesion	20.80	1	20.80	0.1329	0.71690
Running*Lesion	0.01	1	0.01	0.0001	0.99369
MS*Running*Lesion	24.28	1	24.28	0.1551	0.69529
Error	8297.24	53	156.55		

A5.1.5.2.2.2.11. EPM P63 1 minute intervals 2nd interval Maximum Velocity post hoc Newman Keuls test (MS*Running)

Cell No.	Newman-Keuls test; variable 2. Maximum velocity (cm/s) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 156.55, df = 53.000					
	MS	Running	{1} 32.936	{2} 25.066	{3} 31.319	{4} 36.835
1	0	0		0.20435	0.72412	0.39589
2	0	1	0.20435		0.17558	0.05887
3	1	0	0.72412	0.17558		0.45196
4	1	1	0.39589	0.05887	0.45196	

A5.1.5.2.2.2.12. EPM P63 1 minute intervals 2nd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 2. Mean velocity (cm/s) (EPM P63 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	967.647	1	967.647	677.496	0.00000
MS	10.538	1	10.538	7.378	0.00889
Running	7.924	1	7.924	5.547	0.02223
Lesion	0.428	1	0.428	0.299	0.58638
MS*Running	0.048	1	0.048	0.033	0.85493
MS*Lesion	1.237	1	1.237	0.866	0.35610
Running*Lesion	0.016	1	0.016	0.011	0.91439
MS*Running*Lesion	1.274	1	1.274	0.892	0.34919
Error	75.698	53	1.428		

A5.1.5.2.2.2.13. EPM P63 1 minute intervals 2nd interval Mean Velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 2. Mean velocity (cm/s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.4283, df = 53.000 MS	{1} 3.5633	{2} 4.3960
1	0		0.008983
2	1	0.008983	

A5.1.5.2.2.2.14. EPM P63 1 minute intervals 2nd Interval Mean Velocity post hoc Newman Keuls test (Running effect)

Cell No.	Newman-Keuls test; variable 2. Mean velocity (cm/s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.4283, df = 53.000 Running	{1} 4.3498	{2} 3.6278
1	0		0.022579
2	1	0.022579	

A5.1.5.2.2.3.1. EPM P63 1 minute intervals 3rd interval Descriptive Statistics

	Descriptive Statistics (EPM P63 1 min timebins)								
Effect	Level c Factor	Level of Factor	Level of Factor	N	3. Total distance (cm) Mean	3. Total distance (cm) Std.Dev.	3. Total distance (cm) Std.Err	3. Total distance (cm) -95.00%	3. Total distance (cm) +95.00%
Total				61	139.975	53.6467	6.8687	126.235	153.714
MS	0			32	127.863	48.4369	8.5625	110.400	145.327
MS	1			29	153.339	56.7181	10.5323	131.765	174.914
Running	0			28	154.432	49.6827	9.3891	135.167	173.697
Running	1			33	127.708	54.5478	9.4955	108.367	147.050
Lesion	0			32	151.320	59.0996	10.4474	130.013	172.628
Lesion	1			29	127.456	44.6168	8.2851	110.484	144.427
MS*Running	0	0		15	137.437	49.3995	12.7549	110.081	164.794
MS*Running	0	1		17	119.416	47.4195	11.5009	95.035	143.797
MS*Running	1	0		13	174.041	43.9229	12.1820	147.498	200.583
MS*Running	1	1		16	136.519	61.5500	15.3875	103.721	169.317
MS*Lesion	0	0		17	133.669	58.7532	14.2497	103.461	163.877
MS*Lesion	0	1		15	121.284	34.0974	8.8039	102.402	140.167
MS*Lesion	1	0		15	171.325	54.6057	14.0991	141.086	201.565
MS*Lesion	1	1		14	134.068	54.2629	14.5023	102.738	165.399
Running*Lesion	0	0		15	162.755	54.0575	13.9575	132.819	192.691
Running*Lesion	0	1		13	144.828	44.2501	12.2727	118.088	171.568
Running*Lesion	1	0		17	141.231	63.0837	15.3000	108.796	173.665
Running*Lesion	1	1		16	113.341	40.9314	10.2328	91.530	135.152
MS*Running*Les	0	0	0	8	148.863	59.1693	20.9195	99.396	198.330
MS*Running*Les	0	0	1	7	124.379	35.1645	13.2909	91.857	156.901
MS*Running*Les	0	1	0	9	120.163	58.3472	19.4490	75.313	165.012
MS*Running*Les	0	1	1	8	118.576	35.3187	12.4870	89.049	148.103
MS*Running*Les	1	0	0	7	178.631	46.7184	17.6579	135.424	221.839
MS*Running*Les	1	0	1	6	168.685	44.1257	18.0142	122.378	214.992
MS*Running*Les	1	1	0	8	164.932	63.1876	22.3401	112.106	217.759
MS*Running*Les	1	1	1	8	108.106	47.7499	16.8821	68.186	148.026

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Duration in open arms (s) Mean	3. Duration in open arms (s) Std.Dev.	3. Duration in open arms (s) Std.Err	3. Duration in open arms (s) -95.00%	3. Duration in open arms (s) +95.00%
Total				61	2.47540	6.4177	0.82170	0.8317	4.1190
MS	0			32	2.68228	8.0692	1.42646	-0.2270	5.5915
MS	1			29	2.24712	4.0080	0.74428	0.7225	3.7717
Running	0			28	2.82142	7.6595	1.44751	-0.1486	5.7914
Running	1			33	2.18181	5.2469	0.91337	0.3213	4.0422
Lesion	0			32	3.78645	8.2645	1.46098	0.8067	6.7661
Lesion	1			29	1.02873	2.9161	0.54152	-0.0805	2.1379
MS*Running	0	0		15	3.26666	9.7324	2.51291	-2.1230	8.6563
MS*Running	0	1		17	2.16666	6.5325	1.58436	-1.1920	5.5253
MS*Running	1	0		13	2.30768	4.5784	1.26983	-0.4590	5.0744
MS*Running	1	1		16	2.19791	3.6348	0.90870	0.2610	4.1347
MS*Lesion	0	0		17	4.36274	10.6932	2.59348	-1.1351	9.8606
MS*Lesion	0	1		15	0.77777	2.4869	0.64213	-0.5994	2.1550
MS*Lesion	1	0		15	3.13332	4.4388	1.14609	0.6751	5.5914
MS*Lesion	1	1		14	1.29762	3.3919	0.90652	-0.6608	3.2560
Running*Lesion	0	0		15	5.16665	10.0192	2.58695	-0.3818	10.7151
Running*Lesion	0	1		13	0.11538	0.2837	0.07868	-0.0560	0.2868
Running*Lesion	1	0		17	2.56862	6.4139	1.55561	-0.7291	5.8663
Running*Lesion	1	1		16	1.77083	3.8078	0.95195	-0.2582	3.7998
MS*Running*Les	0	0	0	8	6.04166	13.0587	4.61694	-4.8756	16.9590
MS*Running*Les	0	0	1	7	0.09523	0.2519	0.09523	-0.1378	0.3282
MS*Running*Les	0	1	0	9	2.87036	8.6111	2.87036	-3.7487	9.4894
MS*Running*Les	0	1	1	8	1.37499	3.3826	1.19594	-1.4529	4.2029
MS*Running*Les	1	0	0	7	4.16665	5.7526	2.17427	-1.1536	9.4869
MS*Running*Les	1	0	1	6	0.13888	0.3402	0.13888	-0.2181	0.4959
MS*Running*Les	1	1	0	8	2.22916	3.0065	1.06296	-0.2843	4.7426
MS*Running*Les	1	1	1	8	2.16667	4.3897	1.55201	-1.5032	5.8365

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Frequency of entry into open arms Mean	3. Frequency of entry into open arms Std.Dev.	3. Frequency of entry into open arms Std.Err	3. Frequency of entry into open arms -95.00%	3. Frequency of entry into open arms +95.00%
Total				61	0.50819	1.19195	0.15261	0.2029	0.81347
MS	0			32	0.34375	0.74528	0.13174	0.0750	0.61245
MS	1			29	0.68965	1.53770	0.28554	0.1047	1.27456
Running	0			28	0.60714	1.54774	0.29249	0.0069	1.20729
Running	1			33	0.42424	0.79176	0.13782	0.1434	0.70499
Lesion	0			32	0.71875	1.52895	0.27028	0.1675	1.26999
Lesion	1			29	0.27586	0.59140	0.10982	0.0509	0.50081
MS*Running	0	0		15	0.33333	0.61721	0.15936	-0.0084	0.67513
MS*Running	0	1		17	0.35294	0.86177	0.20901	-0.0901	0.79602
MS*Running	1	0		13	0.92307	2.17797	0.60406	-0.3930	2.23921
MS*Running	1	1		16	0.50000	0.73029	0.18257	0.1108	0.88914
MS*Lesion	0	0		17	0.41176	0.87026	0.21106	-0.0356	0.85921
MS*Lesion	0	1		15	0.26666	0.59361	0.15327	-0.0620	0.59540
MS*Lesion	1	0		15	1.06666	2.01659	0.52068	-0.0500	2.18342
MS*Lesion	1	1		14	0.28571	0.61125	0.16336	-0.0672	0.63863
Running*Lesion	0	0		15	1.00000	2.03540	0.52553	-0.1271	2.12716
Running*Lesion	0	1		13	0.15384	0.37553	0.10415	-0.0730	0.38077
Running*Lesion	1	0		17	0.47058	0.87447	0.21209	0.0209	0.92020
Running*Lesion	1	1		16	0.37500	0.71879	0.17969	-0.0080	0.75801
MS*Running*Les	0	0	0	8	0.50000	0.75592	0.26726	-0.1319	1.13197
MS*Running*Les	0	0	1	7	0.14285	0.37796	0.14285	-0.2067	0.49241
MS*Running*Les	0	1	0	9	0.33333	1.00000	0.33333	-0.4353	1.10200
MS*Running*Les	0	1	1	8	0.37500	0.74402	0.26305	-0.2470	0.99701
MS*Running*Les	1	0	0	7	1.57142	2.87849	1.08796	-1.0907	4.23358
MS*Running*Les	1	0	1	6	0.16666	0.40824	0.16666	-0.2617	0.59509
MS*Running*Les	1	1	0	8	0.62500	0.74402	0.26305	0.0029	1.24701
MS*Running*Les	1	1	1	8	0.37500	0.74402	0.26305	-0.2470	0.99701

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Duration in closed arms (s) Mean	3. Duration in closed arms (s) Std.Dev.	3. Duration in closed arms (s) Std.Err	3. Duration in closed arms (s) -95.00%	3. Duration in closed arms (s) +95.00%
Total				61	38.9289	13.0052	1.66515	35.5981	42.2597
MS	0			32	38.7916	14.1677	2.50453	33.6836	43.8997
MS	1			29	39.0804	11.8389	2.19843	34.5771	43.5837
Running	0			28	38.4643	13.0867	2.47317	33.3897	43.5388
Running	1			33	39.3232	13.1255	2.28486	34.6691	43.9773
Lesion	0			32	36.4791	14.7742	2.61174	31.1524	41.8058
Lesion	1			29	41.6321	10.3123	1.91494	37.7096	45.5547
MS*Running	0	0		15	37.8111	14.6066	3.77140	29.7222	45.8999
MS*Running	0	1		17	39.6568	14.1607	3.43447	32.3760	46.9376
MS*Running	1	0		13	39.2179	11.6311	3.22590	32.1893	46.2466
MS*Running	1	1		16	38.9687	12.3844	3.09611	32.3695	45.5679
MS*Lesion	0	0		17	34.7058	16.5540	4.01494	26.1945	43.2171
MS*Lesion	0	1		15	43.4222	9.3826	2.42260	38.2262	48.6181
MS*Lesion	1	0		15	38.4889	12.7279	3.28635	31.4403	45.5374
MS*Lesion	1	1		14	39.7143	11.2509	3.00693	33.2182	46.2103
Running*Lesion	0	0		15	34.1777	15.6924	4.05176	25.4876	42.8679
Running*Lesion	0	1		13	43.4102	6.9700	1.93314	39.1983	47.6222
Running*Lesion	1	0		17	38.5098	14.0747	3.41363	31.2732	45.7463
Running*Lesion	1	1		16	40.1875	12.4369	3.10923	33.5603	46.8146
MS*Running*Les	0	0	0	8	31.8333	17.4212	6.15934	17.2688	46.3978
MS*Running*Les	0	0	1	7	44.6428	6.4531	2.43905	38.6747	50.6110
MS*Running*Les	0	1	0	9	37.2592	16.3378	5.44594	24.7008	49.8176
MS*Running*Les	0	1	1	8	42.3541	11.7295	4.14702	32.5480	52.1603
MS*Running*Les	1	0	0	7	36.8571	14.3108	5.40898	23.6218	50.0924
MS*Running*Les	1	0	1	6	41.9722	7.8749	3.21495	33.7079	50.2365
MS*Running*Les	1	1	0	8	39.9166	11.9778	4.23479	29.9029	49.9303
MS*Running*Les	1	1	1	8	38.0208	13.5328	4.78458	26.7070	49.3346

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	3. Duration in centra square (s) Mean	3. Duration in centra square (s) Std.Dev.	3. Duration in centra square (s) Std.Err	3. Duration in centra square (s) -95.00%	3. Duration in centra square (s) +95.00%
Total				61	7.5956	9.8714	1.26391	5.0674	10.1238
MS	0			32	7.5260	10.4384	1.84527	3.7625	11.2895
MS	1			29	7.6724	9.3896	1.74361	4.1007	11.2440
Running	0			28	7.7142	8.2200	1.55344	4.5268	10.9016
Running	1			33	7.4949	11.2105	1.95150	3.5198	11.4700
Lesion	0			32	8.7343	10.6330	1.87968	4.9007	12.5680
Lesion	1			29	6.3390	8.9732	1.66628	2.9258	9.7523
MS*Running	0	0		15	7.9222	8.5815	2.21573	3.1699	12.6745
MS*Running	0	1		17	7.1764	12.0994	2.93455	0.9554	13.3974
MS*Running	1	0		13	7.4743	8.1239	2.25318	2.5650	12.3836
MS*Running	1	1		16	7.8333	10.5695	2.64237	2.2012	13.4654
MS*Lesion	0	0		17	9.9313	11.6498	2.82550	3.9415	15.9211
MS*Lesion	0	1		15	4.8000	8.4365	2.17830	0.1280	9.4720
MS*Lesion	1	0		15	7.3777	9.5673	2.47027	2.0795	12.6759
MS*Lesion	1	1		14	7.9880	9.5453	2.55108	2.4767	13.4993
Running*Lesion	0	0		15	9.6555	9.0614	2.33964	4.6375	14.6735
Running*Lesion	0	1		13	5.4743	6.7890	1.88295	1.3717	9.5769
Running*Lesion	1	0		17	7.9215	12.0712	2.92771	1.7150	14.1280
Running*Lesion	1	1		16	7.0416	10.5949	2.64874	1.3960	12.6873
MS*Running*Les	0	0	0	8	11.1249	9.4347	3.33567	3.2373	19.0126
MS*Running*Les	0	0	1	7	4.2619	6.2189	2.35052	-1.4896	10.0134
MS*Running*Les	0	1	0	9	8.8703	13.8152	4.60507	-1.7489	19.4896
MS*Running*Les	0	1	1	8	5.2708	10.4239	3.68540	-3.4437	13.9854
MS*Running*Les	1	0	0	7	7.9761	9.0315	3.41360	-0.3766	16.3289
MS*Running*Les	1	0	1	6	6.8888	7.7299	3.15572	-1.2231	15.0009
MS*Running*Les	1	1	0	8	6.8541	10.6056	3.74966	-2.0123	15.7207
MS*Running*Les	1	1	1	8	8.8124	11.1676	3.94837	-0.5239	18.1489

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level o Factor	Level of Factor	Level of Factor	N	3. Maximum velocity (cm/s) Mean	3. Maximum velocity (cm/s) Std.Dev.	3. Maximum velocity (cm/s) Std.Err	3. Maximum velocity (cm/s) -95.00%	3. Maximum velocity (cm/s) +95.00%
Total				61	29.7790	22.4645	2.8762	24.0256	35.532
MS	0			32	26.1167	7.6131	1.3458	23.3719	28.861
MS	1			29	33.8201	31.3845	5.8279	21.8821	45.758
Running	0			28	33.5016	31.6191	5.9754	21.2410	45.762
Running	1			33	26.6204	8.9588	1.5595	23.4438	29.797
Lesion	0			32	32.6572	29.9740	5.2987	21.8504	43.464
Lesion	1			29	26.6031	8.1723	1.5175	23.4945	29.711
MS*Running	0	0		15	26.8818	9.3517	2.4146	21.7030	32.060
MS*Running	0	1		17	25.4416	5.8942	1.4295	22.4110	28.472
MS*Running	1	0		13	41.1398	45.0496	12.4945	13.9166	68.363
MS*Running	1	1		16	27.8730	11.4418	2.8604	21.7760	33.969
MS*Lesion	0	0		17	26.0386	9.1602	2.2216	21.3288	30.748
MS*Lesion	0	1		15	26.2053	5.6945	1.4703	23.0517	29.358
MS*Lesion	1	0		15	40.1583	42.1904	10.8935	16.7941	63.522
MS*Lesion	1	1		14	27.0292	10.4186	2.7845	21.0137	33.044
Running*Lesion	0	0		15	39.5614	42.6186	11.0040	15.9600	63.162
Running*Lesion	0	1		13	26.5096	5.6166	1.5577	23.1155	29.903
Running*Lesion	1	0		17	26.5653	8.2042	1.9898	22.3471	30.783
Running*Lesion	1	1		16	26.6790	9.9708	2.4927	21.3659	31.992
MS*Running*Les	0	0	0	8	27.2922	11.2295	3.9702	17.9041	36.680
MS*Running*Les	0	0	1	7	26.4128	7.5139	2.8400	19.4636	33.362
MS*Running*Les	0	1	0	9	24.9242	7.3831	2.4610	19.2490	30.599
MS*Running*Les	0	1	1	8	26.0237	4.0474	1.4309	22.6400	29.407
MS*Running*Les	1	0	0	7	53.5832	60.5056	22.8689	-2.3751	109.541
MS*Running*Les	1	0	1	6	26.6225	2.8162	1.1497	23.6670	29.578
MS*Running*Les	1	1	0	8	28.4116	9.1756	3.2440	20.7405	36.082
MS*Running*Les	1	1	1	8	27.3343	13.9884	4.9456	15.6397	39.029

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	3. Mean velocity (cm/s) Mean	3. Mean velocity (cm/s) Std.Dev.	3. Mean velocity (cm/s) Std.Err	3. Mean velocity (cm/s) -95.00%	3. Mean velocity (cm/s) +95.00%
Total				61	2.85664	1.09483	0.14017	2.57624	3.13704
MS	0			32	2.60946	0.98850	0.17474	2.25307	2.96586
MS	1			29	3.12938	1.15751	0.21494	2.68908	3.56967
Running	0			28	3.15167	1.01393	0.19161	2.75851	3.54484
Running	1			33	2.60630	1.11322	0.19378	2.21157	3.00103
Lesion	0			32	3.08817	1.20611	0.21321	2.65332	3.52303
Lesion	1			29	2.60115	0.91054	0.16908	2.25479	2.94750
MS*Running	0	0		15	2.80485	1.00815	0.26030	2.24655	3.36314
MS*Running	0	1		17	2.43707	0.96774	0.23471	1.93950	2.93464
MS*Running	1	0		13	3.55186	0.89638	0.24861	3.01018	4.09354
MS*Running	1	1		16	2.78611	1.25612	0.31403	2.11677	3.45545
MS*Lesion	0	0		17	2.72794	1.19904	0.29081	2.11145	3.34443
MS*Lesion	0	1		15	2.47519	0.69586	0.17967	2.08983	2.86055
MS*Lesion	1	0		15	3.49644	1.11440	0.28773	2.87930	4.11358
MS*Lesion	1	1		14	2.73610	1.10740	0.29596	2.09670	3.37549
Running*Lesion	0	0		15	3.32154	1.10321	0.28484	2.71060	3.93248
Running*Lesion	0	1		13	2.95568	0.90306	0.25046	2.40996	3.50139
Running*Lesion	1	0		17	2.88227	1.28742	0.31224	2.22033	3.54420
Running*Lesion	1	1		16	2.31309	0.83533	0.20883	1.86797	2.75821
MS*Running*Les	0	0	0	8	3.03803	1.20753	0.42692	2.02850	4.04756
MS*Running*Les	0	0	1	7	2.53835	0.71764	0.27124	1.87464	3.20206
MS*Running*Les	0	1	0	9	2.45230	1.19076	0.39692	1.53700	3.36760
MS*Running*Les	0	1	1	8	2.41993	0.72079	0.25483	1.81733	3.02252
MS*Running*Les	1	0	0	7	3.64554	0.95343	0.36036	2.76376	4.52733
MS*Running*Les	1	0	1	6	3.44256	0.90052	0.36763	2.49751	4.38760
MS*Running*Les	1	1	0	8	3.36597	1.28954	0.45592	2.28789	4.44406
MS*Running*Les	1	1	1	8	2.20625	0.97448	0.34453	1.39156	3.02094

A5.1.5.2.2.3.2. EPM P63 1 minute intervals 3rd interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 3. Total distance (cm) (EPM P63 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	120564	1	120564	474.614	0.00000
MS	1104	1	1104	4.347	0.04189
Running	1112	1	1112	4.380	0.04116
Lesion	810	1	810	3.190	0.07977
MS*Running	148	1	148	0.585	0.44751
MS*Lesion	155	1	155	0.613	0.43706
Running*Lesion	541	1	541	0.212	0.64639
MS*Running*Lesion	457	1	457	1.802	0.18515
Error	13463	53	254		

A5.1.5.2.2.3.3. EPM P63 1 minute intervals 3rd interval Distance Travelled post hoc Newman Keuls test (MS effect)

	Newman-Keuls test; variable 3. Total distance (cm) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 2540.3, df = 53.000		
Cell No.	MS	{1} 127.86	{2} 153.34
1	0		0.054011
2	1	0.054011	

A5.1.5.2.2.3.4. EPM P63 1 minute intervals 3rd Interval Distance Travelled post hoc Newman Keuls test (Running effect)

	Newman-Keuls test; variable 3. Total distance (cm) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 2540.3, df = 53.000		
Cell No.	Running	{1} 154.43	{2} 127.71
1	0		0.044058
2	1	0.044058	

A5.1.5.2.2.3.5. EPM P63 1 minute interval 3rd interval Open Arm Duration ANOVA

	Univariate Tests of Significance for 3. Duration in open arms (s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	342.443	1	342.443	8.01411	0.00654
MS	2.657	1	2.6567	0.06217	0.80405
Running	3.051	1	3.0508	0.07139	0.79035
Lesion	125.049	1	125.048	2.92648	0.09298
MS*Running	3.693	1	3.6932	0.08643	0.76991
MS*Lesion	10.562	1	10.562	0.24718	0.62112
Running*Lesion	66.606	1	66.605	1.55875	0.21733
MS*Running*Lesion	0.222	1	0.2219	0.00519	0.94282
Error	2264.69	53	42.730		

A5.1.5.2.2.3.6. EPM P63 1 minute interval 3rd interval Open Arm Frequency ANOVA

	Univariate Tests of Significance for 3. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	15.7239	1	15.7239	11.1071	0.00157
MS	1.8086	1	1.8086	1.2776	0.26343
Running	0.4254	1	0.4254	0.3005	0.58587
Lesion	3.6500	1	3.6500	2.5783	0.11427
MS*Running	0.6071	1	0.6071	0.4289	0.51536
MS*Lesion	1.6866	1	1.6866	1.1913	0.27998
Running*Lesion	2.2694	1	2.2694	1.6031	0.21099
MS*Running*Lesion	0.5373	1	0.5373	0.3795	0.54046
Error	75.0297	53	1.4156		

A5.1.5.2.2.3.7. EPM P63 1 minute interval 3rd interval Closed Arm Duration ANOVA

	Univariate Tests of Significance for 3. Duration in closed arms (s) (EPM P Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	92035.6	1	92035.6	524.619	0.00000
MS	0.43	1	0.43	0.002	0.96064
Running	4.74	1	4.74	0.027	0.87005
Lesion	419.57	1	419.57	2.391	0.12793
MS*Running	15.26	1	15.26	0.087	0.76916
MS*Lesion	202.78	1	202.78	1.155	0.28719
Running*Lesion	203.89	1	203.89	1.162	0.28588
MS*Running*Lesion	0.47	1	0.47	0.002	0.95910
Error	9297.9	53	175.43		

A5.1.5.2.2.3.8. EPM P63 1 minute intervals 3rd interval Central Square Duration ANOVA

	Univariate Tests of Significance for 3. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	3391.82	1	3391.82	32.1518	0.00000
MS	0.947	1	0.947	0.0089	0.92487
Running	0.185	1	0.185	0.0017	0.96671
Lesion	86.507	1	86.507	0.8200	0.36927
MS*Running	3.941	1	3.941	0.0373	0.84747
MS*Lesion	120.783	1	120.783	1.1449	0.28946
Running*Lesion	37.429	1	37.429	0.3548	0.55394
MS*Running*Lesion	0.045	1	0.045	0.0004	0.98366
Error	5591.18	53	105.49		

A5.1.5.2.2.3.9. EPM P63 1 minute intervals 3rd interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Maximum velocity (cm/s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	54434.5	1	54434.5	112.098	0.00000
MS	921.12	1	921.12	1.896	0.17421
Running	696.53	1	696.53	1.434	0.23637
Lesion	727.64	1	727.64	1.498	0.22632
MS*Running	442.88	1	442.88	0.912	0.34390
MS*Lesion	750.85	1	750.85	1.546	0.21916
Running*Lesion	729.97	1	729.97	1.503	0.22559
MS*Running*Lesion	537.31	1	537.31	1.106	0.29761
Error	25736.5	53	485.60		

A5.1.5.2.2.3.10. EPM P63 1 minute intervals 3rd interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 3. Mean velocity (cm/s) (EPM P63 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	502.142	1	502.142	474.614	0.00000
MS	4.599	1	4.599	4.347	0.04189
Running	4.634	1	4.634	4.380	0.04116
Lesion	3.375	1	3.375	3.190	0.07977
MS*Running	0.619	1	0.619	0.585	0.44751
MS*Lesion	0.648	1	0.648	0.613	0.43706
Running*Lesion	0.225	1	0.225	0.212	0.64639
MS*Running*Lesion	1.906	1	1.906	1.802	0.18515
Error	56.074	53	1.058		

A5.1.5.2.2.3.11. EPM P63 1 minute intervals 3rd interval Mean Velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 3. Mean velocity (cm/s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.0580, df = 53.000 MS	{1} 2.6095	{2} 3.1294
1	0		0.054011
2	1	0.054011	

12. EPM P63 1 minute intervals 3rd interval Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 3. Mean velocity (cm/s) (EPM P63 1 min time
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 1.0580, df = 53.000

Cell No.	Running	{1} 3.1517	{2} 2.6063
1	0		0.044058
2	1	0.044058	

A5.1.5.2.2.4.1. EPM P63 1 minute intervals 4th interval Descriptive Statistics

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Total distance (cm) Mean	4. Total distance (cm) Std.Dev.	4. Total distance (cm) Std.Err	4. Total distance (cm) -95.00%	4. Total distance (cm) +95.00%
Total				61	121.493	79.537	10.1837	101.123	141.864
MS	0			32	113.410	70.626	12.4850	87.947	138.874
MS	1			29	130.412	88.750	16.4805	96.654	164.171
Running	0			28	135.822	94.341	17.8288	99.240	172.403
Running	1			33	109.336	63.403	11.0370	86.854	131.818
Lesion	0			32	133.057	92.286	16.3141	99.784	166.330
Lesion	1			29	108.733	61.687	11.4551	85.268	132.198
MS*Running	0	0		15	135.207	76.648	19.7906	92.760	177.654
MS*Running	0	1		17	94.178	60.706	14.7235	62.965	125.390
MS*Running	1	0		13	136.531	114.762	31.8295	67.180	205.881
MS*Running	1	1		16	125.441	64.092	16.0230	91.289	159.594
MS*Lesion	0	0		17	112.623	78.062	18.9330	72.487	152.759
MS*Lesion	0	1		15	114.302	63.867	16.4905	78.934	149.671
MS*Lesion	1	0		15	156.216	103.984	26.8486	98.631	213.800
MS*Lesion	1	1		14	102.766	61.067	16.3209	67.507	138.025
Running*Lesion	0	0		15	152.271	117.400	30.3127	87.257	217.286
Running*Lesion	0	1		13	116.841	56.719	15.7312	82.566	151.117
Running*Lesion	1	0		17	116.103	61.561	14.9308	84.452	147.755
Running*Lesion	1	1		16	102.145	66.531	16.6328	66.693	137.597
MS*Running*Les	0	0	0	8	143.241	84.909	30.0200	72.255	214.227
MS*Running*Les	0	0	1	7	126.026	71.504	27.0259	59.896	192.156
MS*Running*Les	0	1	0	9	85.407	64.097	21.3657	36.138	134.677
MS*Running*Les	0	1	1	8	104.045	59.313	20.9704	54.457	153.632
MS*Running*Les	1	0	0	7	162.592	153.349	57.9605	20.768	304.416
MS*Running*Les	1	0	1	6	106.126	36.467	14.8876	67.856	144.395
MS*Running*Les	1	1	0	8	150.637	37.318	13.1940	119.438	181.836
MS*Running*Les	1	1	1	8	100.246	77.193	27.2920	35.711	164.781

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in open arms (s) Mean	4. Duration in open arms (s) Std.Dev.	4. Duration in open arms (s) Std.Err	4. Duration in open arms (s) -95.00%	4. Duration in open arms (s) +95.00%
Total				61	1.63114	5.3258	0.68190	0.2671	2.9951
MS	0			32	2.44791	6.9281	1.22473	-0.0499	4.9457
MS	1			29	0.72988	2.4569	0.45624	-0.2046	1.6644
Running	0			28	1.66071	4.7623	0.90000	-0.1859	3.5073
Running	1			33	1.60606	5.8349	1.01573	-0.4629	3.6750
Lesion	0			32	2.51041	7.1045	1.25592	-0.0510	5.0718
Lesion	1			29	0.66092	1.7437	0.32380	-0.0023	1.3242
MS*Running	0	0		15	2.74444	6.2573	1.61563	-0.7207	6.2096
MS*Running	0	1		17	2.18627	7.6539	1.85635	-1.7490	6.1215
MS*Running	1	0		13	0.41026	1.4792	0.41026	-0.4836	1.3041
MS*Running	1	1		16	0.98957	3.0589	0.76474	-0.6404	2.6195
MS*Lesion	0	0		17	4.02941	9.1867	2.22812	-0.6939	8.7528
MS*Lesion	0	1		15	0.65555	1.8305	0.47265	-0.3581	1.6693
MS*Lesion	1	0		15	0.78888	3.0553	0.78888	-0.9031	2.4808
MS*Lesion	1	1		14	0.66666	1.7147	0.45827	-0.3233	1.6567
Running*Lesion	0	0		15	2.31111	6.2035	1.60174	-1.1242	5.7465
Running*Lesion	0	1		13	0.91026	2.2346	0.61977	-0.4401	2.2606
Running*Lesion	1	0		17	2.68627	8.0032	1.94107	-1.4286	6.8011
Running*Lesion	1	1		16	0.45832	1.2582	0.31457	-0.2121	1.1288
MS*Running*Les	0	0	0	8	4.33333	8.1824	2.89292	-2.5073	11.1740
MS*Running*Les	0	0	1	7	0.92857	2.4567	0.92857	-1.3435	3.2007
MS*Running*Les	0	1	0	9	3.75926	10.4898	3.49660	-4.3039	11.8224
MS*Running*Les	0	1	1	8	0.41666	1.1785	0.41666	-0.5685	1.4019
MS*Running*Les	1	0	0	7	0.00000	0.0000	0.00000	0.0000	0.0000
MS*Running*Les	1	0	1	6	0.88890	2.1773	0.88890	-1.3960	3.1739
MS*Running*Les	1	1	0	8	1.47916	4.1837	1.47916	-2.0185	4.9768
MS*Running*Les	1	1	1	8	0.49999	1.4141	0.49999	-0.6823	1.6822

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	4. Frequency of entry into open arms Mean	4. Frequency of entry into open arms Std.Dev.	4. Frequency of entry into open arms Std.Err	4. Frequency of entry into open arms -95.00%	4. Frequency of entry into open arms +95.00%
Total				61	0.22950	0.69266	0.08868	0.05210	0.40690
MS	0			32	0.34375	0.90194	0.15944	0.01856	0.66893
MS	1			29	0.10344	0.30993	0.05755	-0.01444	0.22134
Running	0			28	0.25000	0.79930	0.15105	-0.05993	0.55993
Running	1			33	0.21212	0.59987	0.10442	-0.00058	0.42482
Lesion	0			32	0.31250	0.89577	0.15835	-0.01046	0.63546
Lesion	1			29	0.13793	0.35093	0.06516	0.00444	0.27141
MS*Running	0	0		15	0.40000	1.05559	0.27255	-0.18457	0.98457
MS*Running	0	1		17	0.29411	0.77174	0.18717	-0.10267	0.69091
MS*Running	1	0		13	0.07692	0.27735	0.07692	-0.09067	0.24452
MS*Running	1	1		16	0.12500	0.34156	0.08539	-0.05700	0.30700
MS*Lesion	0	0		17	0.52941	1.17885	0.28591	-0.07670	1.13552
MS*Lesion	0	1		15	0.13333	0.35186	0.09085	-0.06152	0.32819
MS*Lesion	1	0		15	0.06666	0.25819	0.06666	-0.07631	0.20965
MS*Lesion	1	1		14	0.14285	0.36313	0.09705	-0.06681	0.35252
Running*Lesion	0	0		15	0.33333	1.04653	0.27021	-0.24621	0.91288
Running*Lesion	0	1		13	0.15384	0.37553	0.10415	-0.07308	0.38077
Running*Lesion	1	0		17	0.29411	0.77174	0.18717	-0.10267	0.69091
Running*Lesion	1	1		16	0.12500	0.34156	0.08539	-0.05700	0.30700
MS*Running*Les	0	0	0	8	0.62500	1.40788	0.49776	-0.55202	1.80202
MS*Running*Les	0	0	1	7	0.14285	0.37796	0.14285	-0.20670	0.49241
MS*Running*Les	0	1	0	9	0.44444	1.01379	0.33793	-0.33482	1.22371
MS*Running*Les	0	1	1	8	0.12500	0.35355	0.12500	-0.17057	0.42057
MS*Running*Les	1	0	0	7	0.00000	0.00000	0.00000	0.00000	0.00000
MS*Running*Les	1	0	1	6	0.16666	0.40824	0.16666	-0.26176	0.59509
MS*Running*Les	1	1	0	8	0.12500	0.35355	0.12500	-0.17057	0.42057
MS*Running*Les	1	1	1	8	0.12500	0.35355	0.12500	-0.17057	0.42057

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in closed arms (s) Mean	4. Duration in closed arms (s) Std.Dev.	4. Duration in closed arms (s) Std.Err	4. Duration in closed arms (s) -95.00%	4. Duration in closed arms (s) +95.00%
Total				61	41.2131	12.3003	1.57489	38.0628	44.3633
MS	0			32	38.7656	14.6529	2.59030	33.4826	44.0485
MS	1			29	43.9137	8.4908	1.57671	40.6840	47.1435
Running	0			28	39.1011	12.8542	2.42922	34.1168	44.0855
Running	1			33	43.0050	11.7070	2.03793	38.8539	47.1561
Lesion	0			32	38.5781	15.6455	2.76576	32.9372	44.2189
Lesion	1			29	44.1206	6.0421	1.12200	41.8223	46.4190
MS*Running	0	0		15	37.1333	14.2489	3.67906	29.2425	45.0241
MS*Running	0	1		17	40.2058	15.2854	3.70726	32.3468	48.0649
MS*Running	1	0		13	41.3717	11.1567	3.09432	34.6298	48.1137
MS*Running	1	1		16	45.9791	4.9847	1.24618	43.3229	48.6353
MS*Lesion	0	0		17	34.3823	18.2045	4.41525	25.0224	43.7422
MS*Lesion	0	1		15	43.7333	6.8489	1.76838	39.9405	47.5261
MS*Lesion	1	0		15	43.3333	10.8474	2.80079	37.3262	49.3404
MS*Lesion	1	1		14	44.5357	5.2685	1.40806	41.4937	47.5776
Running*Lesion	0	0		15	36.1555	15.9810	4.12629	27.3055	45.0055
Running*Lesion	0	1		13	42.4999	7.1027	1.96994	38.2078	46.7921
Running*Lesion	1	0		17	40.7156	15.5061	3.76079	32.7431	48.6882
Running*Lesion	1	1		16	45.4375	4.8644	1.21610	42.8454	48.0295
MS*Running*Les	0	0	0	8	33.0000	17.2594	6.10214	18.5707	47.4292
MS*Running*Les	0	0	1	7	41.8571	8.7973	3.32507	33.7209	49.9933
MS*Running*Les	0	1	0	9	35.6111	19.9636	6.65456	20.2656	50.9565
MS*Running*Les	0	1	1	8	45.3750	4.5693	1.61551	41.5549	49.1950
MS*Running*Les	1	0	0	7	39.7618	14.8301	5.60528	26.0462	53.4775
MS*Running*Les	1	0	1	6	43.2499	5.1916	2.11946	37.8017	48.6982
MS*Running*Les	1	1	0	8	46.4583	4.7856	1.69199	42.4574	50.4592
MS*Running*Les	1	1	1	8	45.5000	5.4605	1.93058	40.9348	50.0651

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Duration in central square (s) Mean	4. Duration in central square (s) Std.Dev.	4. Duration in central square (s) Std.Err	4. Duration in central square (s) -95.00%	4. Duration in central square (s) +95.00%
Total				61	6.1557	10.4827	1.34218	3.4709	8.8405
MS	0			32	7.7864	12.1530	2.14837	3.4048	12.1680
MS	1			29	4.3563	8.0971	1.50359	1.2763	7.4363
Running	0			28	8.2381	11.2573	2.12743	3.8729	12.6032
Running	1			33	4.3888	9.5969	1.67061	0.9859	7.7918
Lesion	0			32	7.9114	13.3159	2.35395	3.1105	12.7123
Lesion	1			29	4.2184	5.6349	1.04637	2.0749	6.3618
MS*Running	0	0		15	9.1222	11.6550	3.00930	2.6679	15.5765
MS*Running	0	1		17	6.6078	12.8122	3.10741	0.0204	13.1952
MS*Running	1	0		13	7.2179	11.1603	3.09532	0.4738	13.9620
MS*Running	1	1		16	2.0312	3.1430	0.78575	0.3564	3.7060
MS*Lesion	0	0		17	10.5882	15.1327	3.67023	2.8076	18.3687
MS*Lesion	0	1		15	4.6111	6.7075	1.73187	0.8966	8.3256
MS*Lesion	1	0		15	4.8777	10.5996	2.73680	-0.9920	10.7476
MS*Lesion	1	1		14	3.7976	4.4237	1.18228	1.2434	6.3518
Running*Lesion	0	0		15	10.5333	13.7398	3.54760	2.9244	18.1422
Running*Lesion	0	1		13	5.5897	7.1208	1.97496	1.2866	9.8928
Running*Lesion	1	0		17	5.5980	12.8931	3.12704	-1.0310	12.2270
Running*Lesion	1	1		16	3.1041	3.9688	0.99220	0.9893	5.2190
MS*Running*Les	0	0	0	8	11.6666	13.6346	4.82059	0.2677	23.0655
MS*Running*Les	0	0	1	7	6.2142	9.0316	3.41365	-2.1386	14.5672
MS*Running*Les	0	1	0	9	9.6296	17.1212	5.70708	-3.5309	22.7901
MS*Running*Les	0	1	1	8	3.2083	3.9043	1.38040	-0.0558	6.4724
MS*Running*Les	1	0	0	7	9.2381	14.8301	5.60528	-4.4775	22.9537
MS*Running*Les	1	0	1	6	4.8611	4.7567	1.94194	-0.1307	9.8530
MS*Running*Les	1	1	0	8	1.0625	0.7342	0.25961	0.4486	1.6763
MS*Running*Les	1	1	1	8	3.0000	4.2993	1.52003	-0.5943	6.5943

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Maximum velocity (cm/s) Mean	4. Maximum velocity (cm/s) Std.Dev.	4. Maximum velocity (cm/s) Std.Err	4. Maximum velocity (cm/s) -95.00%	4. Maximum velocity (cm/s) +95.00%
Total				61	26.9675	29.5060	3.7778	19.410	34.524
MS	0			32	21.7499	11.3775	2.0112	17.647	25.852
MS	1			29	32.7249	40.7040	7.5585	17.241	48.207
Running	0			28	31.7261	41.2809	7.8013	15.719	47.733
Running	1			33	22.9299	12.5662	2.1875	18.474	27.385
Lesion	0			32	30.8117	39.1841	6.9268	16.684	44.939
Lesion	1			29	22.7256	11.4084	2.1185	18.386	27.065
MS*Running	0	0		15	25.4076	11.3245	2.9240	19.136	31.679
MS*Running	0	1		17	18.5226	10.7228	2.6006	13.009	24.035
MS*Running	1	0		13	39.0167	59.8093	16.5881	2.874	75.159
MS*Running	1	1		16	27.6128	12.9932	3.2483	20.689	34.536
MS*Lesion	0	0		17	20.6141	10.8547	2.6326	15.033	26.195
MS*Lesion	0	1		15	23.0371	12.1915	3.1478	16.285	29.788
MS*Lesion	1	0		15	42.3690	54.7336	14.1321	12.058	72.679
MS*Lesion	1	1		14	22.3919	10.9558	2.9280	16.066	28.717
Running*Lesion	0	0		15	39.3363	55.3872	14.3009	8.663	70.008
Running*Lesion	0	1		13	22.9452	9.9653	2.7638	16.923	28.967
Running*Lesion	1	0		17	23.2901	12.7405	3.0900	16.739	29.840
Running*Lesion	1	1		16	22.5473	12.7839	3.1959	15.735	29.359
MS*Running*Les	0	0	0	8	27.2007	10.5123	3.7166	18.412	35.989
MS*Running*Les	0	0	1	7	23.3584	12.6936	4.7977	11.618	35.098
MS*Running*Les	0	1	0	9	14.7595	7.5506	2.5168	8.955	20.563
MS*Running*Les	0	1	1	8	22.7561	12.6081	4.4576	12.215	33.296
MS*Running*Les	1	0	0	7	53.2055	81.2918	30.7254	-21.976	128.387
MS*Running*Les	1	0	1	6	22.4631	6.6683	2.7223	15.465	29.461
MS*Running*Les	1	1	0	8	32.8871	10.3461	3.6579	24.237	41.536
MS*Running*Les	1	1	1	8	22.3384	13.8254	4.8880	10.780	33.896

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	4. Mean velocity (cm/s) Mean	4. Mean velocity (cm/s) Std.Dev.	4. Mean velocity (cm/s) Std.Err	4. Mean velocity (cm/s) -95.00%	4. Mean velocity (cm/s) +95.00%
Total				61	2.47946	1.62321	0.20783	2.06373	2.89519
MS	0			32	2.31450	1.44135	0.25479	1.79484	2.83417
MS	1			29	2.66148	1.81123	0.33633	1.97253	3.35044
Running	0			28	2.77188	1.92534	0.36385	2.02531	3.51844
Running	1			33	2.23135	1.29394	0.22524	1.77254	2.69016
Lesion	0			32	2.71546	1.88340	0.33294	2.03642	3.39450
Lesion	1			29	2.21905	1.25893	0.23377	1.74017	2.69792
MS*Running	0	0		15	2.75934	1.56426	0.40389	1.89308	3.62560
MS*Running	0	1		17	1.92200	1.23891	0.30048	1.28501	2.55899
MS*Running	1	0		13	2.78634	2.34210	0.64958	1.37103	4.20166
MS*Running	1	1		16	2.56003	1.30800	0.32700	1.86305	3.25702
MS*Lesion	0	0		17	2.29844	1.59311	0.38638	1.47933	3.11754
MS*Lesion	0	1		15	2.33271	1.30342	0.33654	1.61090	3.05452
MS*Lesion	1	0		15	3.18808	2.12212	0.54793	2.01289	4.36328
MS*Lesion	1	1		14	2.09727	1.24627	0.33308	1.37769	2.81684
Running*Lesion	0	0		15	3.10759	2.39593	0.61862	1.78076	4.43441
Running*Lesion	0	1		13	2.38452	1.15754	0.32104	1.68502	3.08402
Running*Lesion	1	0		17	2.36946	1.25635	0.30471	1.72351	3.01542
Running*Lesion	1	1		16	2.08460	1.35778	0.33944	1.36109	2.80811
MS*Running*Les	0	0	0	8	2.92329	1.73284	0.61265	1.47459	4.37199
MS*Running*Les	0	0	1	7	2.57196	1.45926	0.55155	1.22236	3.92156
MS*Running*Les	0	1	0	9	1.74301	1.30810	0.43603	0.73751	2.74851
MS*Running*Les	0	1	1	8	2.12336	1.21047	0.42796	1.11138	3.13535
MS*Running*Les	1	0	0	7	3.31821	3.12957	1.18286	0.42384	6.21259
MS*Running*Les	1	0	1	6	2.16583	0.74422	0.30382	1.38482	2.94685
MS*Running*Les	1	1	0	8	3.07422	0.76159	0.26926	2.43751	3.71094
MS*Running*Les	1	1	1	8	2.04584	1.57537	0.55698	0.72879	3.36289

A5.1.5.2.2.4.2. EPM P63 1 minute intervals 4th interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 4. Total distance (cm) (EPM P63 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	899973.	1	899973.	141.185	0.00000
MS	3485.3	1	3485.3	0.546	0.46290
Running	8966.2	1	8966.2	1.406	0.24091
Lesion	10452.9	1	10452.9	1.639	0.20592
MS*Running	3612.2	1	3612.2	0.566	0.45491
MS*Lesion	11024.4	1	11024.4	1.729	0.19413
Running*Lesion	1653.0	1	1653.0	0.259	0.61270
MS*Running*Lesion	833.7	1	833.7	0.130	0.71905
Error	337844.0	53	6374.4		

A5.1.5.2.2.4.3. EPM P63 1 minute intervals 4th interval Open Arm Duration ANOVA

Effect	Univariate Tests of Significance for 4. Duration in open arms (s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	142.39	1	142.394	4.85293	0.03196
MS	40.585	1	40.585	1.38318	0.24481
Running	0.000	1	0.000	0.00000	1.00000
Lesion	43.962	1	43.962	1.49826	0.22635
MS*Running	4.453	1	4.453	0.15177	0.69841
MS*Lesion	41.67	1	41.671	1.42019	0.23868
Running*Lesion	3.067	1	3.066	0.10451	0.74775
MS*Running*Lesion	3.503	1	3.503	0.11939	0.73105
Error	1555.11	53	29.341		

A5.1.5.2.2.4.4. EPM P63 1 minute intervals 4th interval Open Arm Frequency ANOVA

Effect	Univariate Tests of Significance for 4. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2.8927	1	2.89273	5.80460	0.01949
MS	0.7969	1	0.79696	1.59920	0.21154
Running	0.0124	1	0.01245	0.02498	0.87499
Lesion	0.3790	1	0.37905	0.76062	0.38706
MS*Running	0.0746	1	0.07464	0.14977	0.70029
MS*Lesion	0.8815	1	0.88154	1.76891	0.18921
Running*Lesion	0.0000	1	0.00001	0.00003	0.99567
MS*Running*Lesion	0.1020	1	0.10200	0.20468	0.65281
Error	26.4127	53	0.49835		

A5.1.5.2.2.4.5. EPM P63 1 minute intervals 4th interval Closed Arm Duration ANOVA

Effect	Univariate Tests of Significance for 4. Duration in closed arms (s) (EPM P6 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	102903.	1	102903.	707.607	0.00000
MS	344.0	1	344.0	2.365	0.12999
Running	213.7	1	213.7	1.469	0.23080
Lesion	420.6	1	420.6	2.892	0.09485
MS*Running	7.5	1	7.5	0.051	0.82163
MS*Lesion	243.5	1	243.5	1.674	0.20130
Running*Lesion	11.8	1	11.8	0.081	0.77703
MS*Running*Lesion	26.9	1	26.9	0.185	0.66861
Error	7707.5	53	145.4		

A5.1.5.2.2.4.6. EPM P63 1 minute intervals 4th interval Central Square Duration ANOVA

Effect	Univariate Tests of Significance for 4. Duration in central square (s) (EPM F Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2246.67	1	2246.67	20.5000	0.00003
MS	148.26	1	148.26	1.3528	0.24998
Running	213.82	1	213.82	1.9510	0.16829
Lesion	192.63	1	192.63	1.7577	0.19059
MS*Running	23.44	1	23.44	0.2139	0.64557
MS*Lesion	83.69	1	83.69	0.7636	0.38613
Running*Lesion	26.86	1	26.86	0.2451	0.62254
MS*Running*Lesion	49.88	1	49.88	0.4551	0.50283
Error	5808.47	53	109.59		

A5.1.5.2.2.4.7. EPM P63 1 minute intervals 4th interval Maximum velocity ANOVA

Effect	Univariate Tests of Significance for 4. Maximum velocity (cm/s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	45084.9	1	45084.9	52.7844	0.00000
MS	1724.05	1	1724.05	2.0184	0.16125
Running	1054.40	1	1054.40	1.2344	0.27155
Lesion	1296.80	1	1296.80	1.5182	0.22332
MS*Running	51.49	1	51.49	0.0602	0.80700
MS*Lesion	1941.97	1	1941.97	2.2736	0.13753
Running*Lesion	964.83	1	964.83	1.1296	0.29267
MS*Running*Lesion	65.64	1	65.64	0.0768	0.78269
Error	45269.00	53	854.13		

A5.1.5.2.2.4.8. EPM P63 1 minute intervals 4th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 4. Mean velocity (cm/s) (EPM P63 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	374.833	1	374.833	141.185	0.00000
MS	1.451	1	1.451	0.546	0.46290
Running	3.734	1	3.734	1.406	0.24091
Lesion	4.353	1	4.353	1.639	0.20592
MS*Running	1.504	1	1.504	0.566	0.45491
MS*Lesion	4.591	1	4.591	1.729	0.19413
Running*Lesion	0.688	1	0.688	0.259	0.61270
MS*Running*Lesion	0.347	1	0.347	0.130	0.71905
Error	140.709	53	2.654		

A5.1.5.2.2.5.1. EPM P63 1 minute intervals 5th interval Descriptive Statistics

	Descriptive Statistics (EPM P63 1 min timebins)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	5. Total distance (cm) Mean	5. Total distance (cm) Std.Dev.	5. Total distance (cm) Std.Err	5. Total distance (cm) -95.00%	5. Total distance (cm) +95.00%
Total				60	98.806	54.1021	6.9845	84.830	112.782
MS	0			32	83.121	53.0950	9.3859	63.978	102.264
MS	1			28	116.732	50.3447	9.5142	97.210	136.253
Running	0			27	102.717	44.7000	8.6025	85.035	120.400
Running	1			33	95.605	61.2357	10.6597	73.892	117.319
Lesion	0			31	100.677	54.8217	9.8462	80.569	120.786
Lesion	1			29	96.805	54.2179	10.0680	76.182	117.428
MS*Running	0	0		15	81.195	44.2622	11.4284	56.683	105.706
MS*Running	0	1		17	84.820	61.1650	14.8347	53.372	116.268
MS*Running	1	0		12	129.621	28.4258	8.2058	111.560	147.682
MS*Running	1	1		16	107.065	61.1321	15.2830	74.490	139.640
MS*Lesion	0	0		17	86.800	59.8790	14.5228	56.013	117.587
MS*Lesion	0	1		15	78.951	45.9289	11.8588	53.516	104.385
MS*Lesion	1	0		14	117.529	44.3286	11.8473	91.934	143.123
MS*Lesion	1	1		14	115.935	57.4261	15.3477	82.778	149.092
Running*Lesion	0	0		14	101.420	41.4716	11.0837	77.475	125.365
Running*Lesion	0	1		13	104.114	49.6174	13.7614	74.131	134.098
Running*Lesion	1	0		17	100.066	65.0912	15.7869	66.599	133.533
Running*Lesion	1	1		16	90.866	58.5984	14.6496	59.641	122.091
MS*Running*Les	0	0	0	8	83.379	37.8459	13.3805	51.739	115.019
MS*Running*Les	0	0	1	7	78.698	53.7277	20.3071	29.008	128.388
MS*Running*Les	0	1	0	9	89.841	76.7828	25.5942	30.821	148.862
MS*Running*Les	0	1	1	8	79.172	41.7675	14.7670	44.253	114.090
MS*Running*Les	1	0	0	6	125.475	35.3746	14.4416	88.351	162.598
MS*Running*Les	1	0	1	6	133.767	22.0237	8.9911	110.654	156.879
MS*Running*Les	1	1	0	8	111.569	51.5829	18.2373	68.444	154.693
MS*Running*Les	1	1	1	8	102.561	72.8078	25.7414	41.692	163.430

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Duration in open arms (s) Mean	5. Duration in open arms (s) Std.Dev.	5. Duration in open arms (s) Std.Err	5. Duration in open arms (s) -95.00%	5. Duration in open arms (s) +95.00%
Total				60	0.78888	2.55410	0.32973	0.1291	1.44868
MS	0			32	0.75000	2.78469	0.49226	-0.2539	1.75399
MS	1			28	0.83333	2.31251	0.43702	-0.0633	1.73003
Running	0			27	1.34567	3.42376	0.65890	-0.0087	2.70007
Running	1			33	0.33333	1.42399	0.24788	-0.1715	0.83825
Lesion	0			31	0.74731	2.34001	0.42027	-0.1110	1.60563
Lesion	1			29	0.83333	2.80625	0.52110	-0.2341	1.90077
MS*Running	0	0		15	1.06667	3.55893	0.91891	-0.9042	3.03754
MS*Running	0	1		17	0.47058	1.94026	0.47058	-0.5270	1.46817
MS*Running	1	0		12	1.69443	3.36862	0.97243	-0.4458	3.83475
MS*Running	1	1		16	0.18750	0.51596	0.12899	-0.0874	0.46244
MS*Lesion	0	0		17	0.56862	1.95703	0.47465	-0.4375	1.57483
MS*Lesion	0	1		15	0.95556	3.56488	0.92044	-1.0186	2.92972
MS*Lesion	1	0		14	0.96429	2.79818	0.74784	-0.6513	2.57991
MS*Lesion	1	1		14	0.70237	1.80001	0.48107	-0.3369	1.74167
Running*Lesion	0	0		14	0.86904	2.80733	0.75029	-0.7518	2.48995
Running*Lesion	0	1		13	1.85897	4.03851	1.12008	-0.5814	4.29942
Running*Lesion	1	0		17	0.64706	1.95954	0.47525	-0.3604	1.65456
Running*Lesion	1	1		16	0.00000	0.00000	0.00000	0.0000	0.00000
MS*Running*Les	0	0	0	8	0.20833	0.58925	0.20833	-0.2843	0.70096
MS*Running*Les	0	0	1	7	2.04763	5.20038	1.96556	-2.7619	6.85718
MS*Running*Les	0	1	0	9	0.88888	2.66663	0.88888	-1.1608	2.93864
MS*Running*Les	0	1	1	8	0.00000	0.00000	0.00000	0.0000	0.00000
MS*Running*Les	1	0	0	6	1.74999	4.28660	1.74999	-2.7485	6.24851
MS*Running*Les	1	0	1	6	1.63887	2.56560	1.04740	-1.0535	4.33131
MS*Running*Les	1	1	0	8	0.37501	0.70008	0.24751	-0.2102	0.96029
MS*Running*Les	1	1	1	8	0.00000	0.00000	0.00000	0.0000	0.00000

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Frequency of entry into open arms Mean	5. Frequency of entry into open arms Std.Dev.	5. Frequency of entry into open arms Std.Err	5. Frequency of entry into open arms -95.00%	5. Frequency of entry into open arms +95.00%
Total				60	0.30000	0.82953	0.10709	0.08570	0.51429
MS	0			32	0.15625	0.44788	0.07917	-0.00523	0.31773
MS	1			28	0.46428	1.10494	0.20881	0.03583	0.89273
Running	0			27	0.51851	1.12216	0.21596	0.07460	0.96243
Running	1			33	0.12121	0.41514	0.07226	-0.02599	0.26841
Lesion	0			31	0.25806	0.68155	0.12241	0.00806	0.50806
Lesion	1			29	0.34482	0.97379	0.18082	-0.02558	0.71523
MS*Running	0	0		15	0.26666	0.59361	0.15327	-0.06206	0.59540
MS*Running	0	1		17	0.05882	0.24253	0.05882	-0.06587	0.18352
MS*Running	1	0		12	0.83333	1.52752	0.44095	-0.13721	1.80387
MS*Running	1	1		16	0.18750	0.54390	0.13597	-0.10232	0.47732
MS*Lesion	0	0		17	0.11764	0.33210	0.08054	-0.05310	0.28840
MS*Lesion	0	1		15	0.20000	0.56061	0.14474	-0.11045	0.51045
MS*Lesion	1	0		14	0.42857	0.93761	0.25058	-0.11279	0.96993
MS*Lesion	1	1		14	0.50000	1.28601	0.34370	-0.24252	1.24252
Running*Lesion	0	0		14	0.28571	0.82542	0.22060	-0.19086	0.76229
Running*Lesion	0	1		13	0.76923	1.36344	0.37815	-0.05468	1.59315
Running*Lesion	1	0		17	0.23529	0.56229	0.13637	-0.05381	0.52440
Running*Lesion	1	1		16	0.00000	0.00000	0.00000	0.00000	0.00000
MS*Running*Les	0	0	0	8	0.12500	0.35355	0.12500	-0.17057	0.42057
MS*Running*Les	0	0	1	7	0.42857	0.78679	0.29738	-0.29909	1.15623
MS*Running*Les	0	1	0	9	0.11111	0.33333	0.11111	-0.14511	0.36733
MS*Running*Les	0	1	1	8	0.00000	0.00000	0.00000	0.00000	0.00000
MS*Running*Les	1	0	0	6	0.50000	1.22474	0.50000	-0.78529	1.78529
MS*Running*Les	1	0	1	6	1.16666	1.83484	0.74907	-0.75888	3.09222
MS*Running*Les	1	1	0	8	0.37500	0.74402	0.26305	-0.24701	0.99701
MS*Running*Les	1	1	1	8	0.00000	0.00000	0.00000	0.00000	0.00000

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level c Factor	Level of Factor	Level of Factor	N	5. Duration in closed arms (s) Mean	5. Duration in closed arms (s) Std.Dev.	5. Duration in closed arms (s) Std.Err	5. Duration in closed arms (s) -95.00%	5. Duration in closed arms (s) +95.00%
Total				60	38.6027	15.7992	2.03967	34.5214	42.6841
MS	0			32	38.1614	16.2514	2.87287	32.3021	44.0207
MS	1			28	39.1071	15.5475	2.93821	33.0784	45.1358
Running	0			27	35.2963	15.9252	3.06481	28.9964	41.5961
Running	1			33	41.3080	15.4076	2.68213	35.8447	46.7714
Lesion	0			31	37.2957	16.1092	2.89330	31.3867	43.2046
Lesion	1			29	40.0000	15.6211	2.90077	34.0580	45.9419
MS*Running	0	0		15	36.9333	14.8030	3.82213	28.7356	45.1309
MS*Running	0	1		17	39.2451	17.8131	4.32033	30.0864	48.4037
MS*Running	1	0		12	33.2500	17.6730	5.10175	22.0211	44.4789
MS*Running	1	1		16	43.4999	12.5711	3.14278	36.8013	50.1986
MS*Lesion	0	0		17	36.4607	16.5518	4.01441	27.9506	44.9709
MS*Lesion	0	1		15	40.0888	16.2547	4.19696	31.0872	49.0904
MS*Lesion	1	0		14	38.3095	16.1138	4.30661	29.0056	47.6134
MS*Lesion	1	1		14	39.9047	15.5248	4.14918	30.9410	48.8685
Running*Lesion	0	0		14	32.1785	16.5546	4.42442	22.6201	41.7369
Running*Lesion	0	1		13	38.6538	15.1343	4.19751	29.5082	47.7994
Running*Lesion	1	0		17	41.5098	14.9038	3.61470	33.8469	49.1726
Running*Lesion	1	1		16	41.0937	16.4139	4.10349	32.3473	49.8401
MS*Running*Lesi	0	0	0	8	35.1041	13.9124	4.91877	23.4730	46.7352
MS*Running*Lesi	0	0	1	7	39.0238	16.6111	6.27842	23.6610	54.3865
MS*Running*Lesi	0	1	0	9	37.6666	19.3672	6.45575	22.7796	52.5536
MS*Running*Lesi	0	1	1	8	41.0208	17.0234	6.01869	26.7888	55.2527
MS*Running*Lesi	1	0	0	6	28.2777	20.2390	8.26254	7.03825	49.5173
MS*Running*Lesi	1	0	1	6	38.2222	14.7710	6.03026	22.7209	53.7235
MS*Running*Lesi	1	1	0	8	45.8333	6.2195	2.19894	40.6336	51.0330
MS*Running*Lesi	1	1	1	8	41.1666	16.9562	5.99495	26.9908	55.3424

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Duration in central square (s) Mean	5. Duration in central square (s) Std.Dev.	5. Duration in central square (s) Std.Err	5. Duration in central square (s) -95.00%	5. Duration in central square (s) +95.00%
Total				61	9.4508	15.1739	1.94282	5.5646	13.3370
MS	0			32	10.0885	15.8022	2.79347	4.3912	15.7858
MS	1			29	8.7471	14.6950	2.72880	3.1574	14.3368
Running	0			28	11.9166	14.7976	2.79648	6.1787	17.6545
Running	1			33	7.3585	15.3988	2.68059	1.8983	12.8187
Lesion	0			32	10.6145	15.4033	2.72294	5.0611	16.1680
Lesion	1			29	8.1666	15.0814	2.80055	2.4299	13.9033
MS*Running	0	0		15	11.0000	13.6146	3.51527	3.4605	18.5395
MS*Running	0	1		17	9.2843	17.8930	4.33971	0.0845	18.4840
MS*Running	1	0		13	12.9743	16.5580	4.59238	2.9684	22.9802
MS*Running	1	1		16	5.3125	12.4776	3.11941	-1.3363	11.9613
MS*Lesion	0	0		17	11.9706	16.6203	4.03103	3.4251	20.5160
MS*Lesion	0	1		15	7.9555	15.1015	3.89921	-0.4074	16.3185
MS*Lesion	1	0		15	9.0777	14.3144	3.69597	1.1506	17.0048
MS*Lesion	1	1		14	8.3928	15.6264	4.17634	-0.6295	17.4152
Running*Lesion	0	0		15	14.8889	15.3573	3.96524	6.3842	23.3935
Running*Lesion	0	1		13	8.4871	13.9191	3.86047	0.0759	16.8984
Running*Lesion	1	0		17	6.8431	14.8690	3.60627	-0.8018	14.4880
Running*Lesion	1	1		16	7.9062	16.4139	4.10349	-0.8401	16.6526
MS*Running*Les	0	0	0	8	13.6875	13.6641	4.83101	2.2639	25.1110
MS*Running*Les	0	0	1	7	7.9285	13.9296	5.26492	-4.9542	20.8113
MS*Running*Les	0	1	0	9	10.4444	19.5840	6.52801	-4.6091	25.4980
MS*Running*Les	0	1	1	8	7.9791	17.0234	6.01869	-6.2527	22.2111
MS*Running*Les	1	0	0	7	16.2618	18.1206	6.84897	-0.4969	33.0207
MS*Running*Les	1	0	1	6	9.1388	15.2050	6.20742	-6.8178	25.0955
MS*Running*Les	1	1	0	8	2.7916	5.6200	1.98699	-1.9068	7.4901
MS*Running*Les	1	1	1	8	7.8333	16.9562	5.99495	-6.3424	22.0091

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Maximum velocity (cm/s) Mean	5. Maximum velocity (cm/s) Std.Dev.	5. Maximum velocity (cm/s) Std.Err	5. Maximum velocity (cm/s) -95.00%	5. Maximum velocity (cm/s) +95.00%
Total				60	22.9305	18.8910	2.4388	18.0504	27.8105
MS	0			32	17.5566	12.3642	2.1857	13.0988	22.0144
MS	1			28	29.0720	23.0427	4.3546	20.1370	38.0071
Running	0			27	22.4897	10.1945	1.9619	18.4569	26.5225
Running	1			33	23.2911	23.9425	4.1678	14.8015	31.7807
Lesion	0			31	21.7951	11.3942	2.0464	17.6157	25.9746
Lesion	1			29	24.1441	24.6966	4.5860	14.7500	33.5382
MS*Running	0	0		15	19.3097	12.1260	3.1309	12.5945	26.0249
MS*Running	0	1		17	16.0097	12.7321	3.0880	9.4635	22.5560
MS*Running	1	0		12	26.4647	5.2418	1.5132	23.1342	29.7952
MS*Running	1	1		16	31.0276	30.4314	7.6078	14.8118	47.2433
MS*Lesion	0	0		17	17.7643	11.9084	2.8882	11.6415	23.8871
MS*Lesion	0	1		15	17.3212	13.2787	3.4285	9.9677	24.6747
MS*Lesion	1	0		14	26.6897	8.8328	2.3606	21.5898	31.7897
MS*Lesion	1	1		14	31.4544	31.8203	8.5043	13.0818	49.8269
Running*Lesion	0	0		14	22.8326	8.6813	2.3201	17.8201	27.8450
Running*Lesion	0	1		13	22.1205	11.9685	3.3194	14.8879	29.3530
Running*Lesion	1	0		17	20.9408	13.4341	3.2582	14.0336	27.8480
Running*Lesion	1	1		16	25.7883	31.8982	7.9745	8.7909	42.7857
MS*Running*Les	0	0	0	8	20.5065	10.1089	3.5740	12.0551	28.9578
MS*Running*Les	0	0	1	7	17.9419	14.8250	5.6033	4.2311	31.6528
MS*Running*Les	0	1	0	9	15.3268	13.4164	4.4721	5.0140	25.6396
MS*Running*Les	0	1	1	8	16.7780	12.7882	4.5213	6.0868	27.4693
MS*Running*Les	1	0	0	6	25.9340	5.7170	2.3339	19.9344	31.9336
MS*Running*Les	1	0	1	6	26.9954	5.2048	2.1248	21.5333	32.4575
MS*Running*Les	1	1	0	8	27.2565	10.9859	3.8841	18.0720	36.4410
MS*Running*Les	1	1	1	8	34.7986	42.7931	15.1296	-0.9772	70.5745

Effect	Descriptive Statistics (EPM P63 1 min timebins)								
	Level of Factor	Level of Factor	Level of Factor	N	5. Mean velocity (cm/s) Mean	5. Mean velocity (cm/s) Std.Dev.	5. Mean velocity (cm/s) Std.Err	5. Mean velocity (cm/s) -95.00%	5. Mean velocity (cm/s) +95.00%
Total				60	2.01645	1.10412	0.14254	1.73122	2.30168
MS	0			32	1.69635	1.08357	0.19155	1.30568	2.08702
MS	1			28	2.38228	1.02744	0.19416	1.98388	2.78068
Running	0			27	2.09628	0.91224	0.17556	1.73540	2.45715
Running	1			33	1.95114	1.24971	0.21754	1.50801	2.39427
Lesion	0			31	2.05465	1.11881	0.20094	1.64426	2.46503
Lesion	1			29	1.97562	1.10648	0.20547	1.55473	2.39650
MS*Running	0	0		15	1.65704	0.90331	0.23323	1.15680	2.15727
MS*Running	0	1		17	1.73103	1.24826	0.30274	1.08923	2.37283
MS*Running	1	0		12	2.64533	0.58011	0.16746	2.27674	3.01392
MS*Running	1	1		16	2.18500	1.24759	0.31189	1.52020	2.84980
MS*Lesion	0	0		17	1.77144	1.22202	0.29638	1.14313	2.39974
MS*Lesion	0	1		15	1.61125	0.93732	0.24201	1.09217	2.13032
MS*Lesion	1	0		14	2.39855	0.90466	0.24178	1.87621	2.92089
MS*Lesion	1	1		14	2.36602	1.17196	0.31322	1.68935	3.04269
Running*Lesion	0	0		14	2.06980	0.84636	0.22619	1.58113	2.55848
Running*Lesion	0	1		13	2.12479	1.01260	0.28084	1.51288	2.73670
Running*Lesion	1	0		17	2.04217	1.32839	0.32218	1.35917	2.72516
Running*Lesion	1	1		16	1.85442	1.19588	0.29897	1.21718	2.49166
MS*Running*Les	0	0	0	8	1.70162	0.77236	0.27307	1.05590	2.34733
MS*Running*Les	0	0	1	7	1.60609	1.09648	0.41443	0.59201	2.62017
MS*Running*Les	0	1	0	9	1.83350	1.56699	0.52233	0.62899	3.03800
MS*Running*Les	0	1	1	8	1.61576	0.85239	0.30136	0.90314	2.32838
MS*Running*Les	1	0	0	6	2.56072	0.72193	0.29472	1.80310	3.31834
MS*Running*Les	1	0	1	6	2.72994	0.44946	0.18349	2.25825	3.20162
MS*Running*Les	1	1	0	8	2.27692	1.05271	0.37219	1.39683	3.15701
MS*Running*Les	1	1	1	8	2.09308	1.48587	0.52533	0.85086	3.33530

A5.1.5.2.2.5.2. EPM P63 1 minute intervals 5th interval Distance Travelled ANOVA

Effect	Univariate Tests of Significance for 5. Total distance (cm) (EPM P63 1 mi Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	595201.3	1	595201.3	204.783	0.00000
MS	18618.5	1	18618.5	6.405	0.01443
Running	1340.4	1	1340.4	0.461	0.50008
Lesion	237.4	1	237.4	0.081	0.77616
MS*Running	2491.5	1	2491.5	0.857	0.35879
MS*Lesion	196.9	1	196.9	0.067	0.79565
Running*Lesion	498.8	1	498.8	0.171	0.68038
MS*Running*Lesion	117.7	1	117.7	0.040	0.84131
Error	151137.3	52	2906.5		

A5.1.5.2.2.5.3. EPM P63 1 minute intervals 5th interval Distance Travelled post hoc Newman Keuls test (MS effect)

	Newman-Keuls test; variable 5. Total distance (cm) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 2906.5, df = 52.000		
Cell No.	MS	{1} 83.121	{2} 116.73
1	0		0.019676
2	1	0.019676	

A5.1.5.2.2.5.4. EPM P63 1 minute intervals 5th interval Open Arm Duration ANOVA

	Univariate Tests of Significance for 5. Duration in open arms (s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	43.898	1	43.8982	6.52575	0.01360
MS	0.352	1	0.3524	0.05239	0.81984
Running	17.651	1	17.6516	2.62403	0.11130
Lesion	0.198	1	0.1982	0.02947	0.86436
MS*Running	2.494	1	2.4941	0.37076	0.54523
MS*Lesion	1.898	1	1.8979	0.28214	0.59755
Running*Lesion	8.233	1	8.2336	1.22398	0.27367
MS*Running*Lesion	5.585	1	5.5851	0.83026	0.36640
Error	349.799	52	6.7269		

A5.1.5.2.2.5.5. EPM P63 1 minute intervals 5th interval Open Arm Frequency ANOVA

	Univariate Tests of Significance for 5. Frequency of entry into open arms (Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	6.7362	1	6.73624	10.3983	0.00218
MS	1.7438	1	1.74384	2.69188	0.10689
Running	2.7657	1	2.76574	4.26932	0.04380
Lesion	0.2155	1	0.21556	0.33275	0.56653
MS*Running	0.6632	1	0.66324	1.02382	0.31630
MS*Lesion	0.0090	1	0.00905	0.01397	0.90636
Running*Lesion	1.9506	1	1.95065	3.01112	0.08861
MS*Running*Lesion	0.3615	1	0.36154	0.55810	0.45839
Error	33.6865	52	0.64781		

A5.1.5.2.2.5.6. EPM P63 1 minute intervals 5th interval Open Arm Frequency post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable 5. Frequency of entry into open arms (EPM P63 1 min tim
Approximate Probabilities for Post Hoc Tests
Error: Between MS = .64782, df = 52.000

Cell No.	Running	{1} .51852	{2} .12121
1	0		0.06279
2	1	0.06279	

A5.1.5.2.2.5.7. EPM P63 1 minute intervals 5th interval Closed Arm Duration ANOVA

Univariate Tests of Significance for 5. Duration in closed arms (s) (EPM P(
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	86295.4	1	86295.4	333.331	0.00000
MS	0.43	1	0.43	0.001	0.96760
Running	577.56	1	577.56	2.230	0.14131
Lesion	144.89	1	144.89	0.559	0.45776
MS*Running	233.69	1	233.69	0.902	0.34645
MS*Lesion	3.66	1	3.66	0.014	0.90575
Running*Lesion	211.84	1	211.84	0.818	0.36986
MS*Running*Lesion	181.44	1	181.44	0.700	0.40633
Error	13462.1	52	258.89		

A5.1.5.2.2.5.8. EPM P63 1 minute intervals 5th interval Central Square Duration ANOVA

Univariate Tests of Significance for 5. Duration in central square (s) (EPM F
Sigma-restricted parameterization
Effective hypothesis decomposition

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	5440.5	1	5440.52	22.3043	0.00001
MS	15.15	1	15.150	0.0621	0.80415
Running	303.58	1	303.58	1.2445	0.26962
Lesion	99.86	1	99.864	0.4094	0.52502
MS*Running	126.16	1	126.16	0.5172	0.47518
MS*Lesion	35.48	1	35.482	0.1454	0.70443
Running*Lesion	224.70	1	224.69	0.9211	0.34152
MS*Running*Lesion	74.00	1	73.996	0.3033	0.58409
Error	12927.8	53	243.92		

A5.1.5.2.2.5.9. EPM P63 1 minute intervals 5th interval Maximum Velocity ANOVA

Effect	Univariate Tests of Significance for 5. Maximum velocity (cm/s) (EPM P63 Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	31660.4	1	31660.4	88.6020	0.00000
MS	1815.6	1	1815.6	5.0810	0.02842
Running	7.12	1	7.12	0.0199	0.88830
Lesion	51.60	1	51.60	0.1444	0.70549
MS*Running	220.08	1	220.08	0.6159	0.43613
MS*Lesion	86.84	1	86.84	0.2430	0.62411
Running*Lesion	101.33	1	101.33	0.2835	0.59663
MS*Running*Lesion	5.59	1	5.59	0.0156	0.90096
Error	18581.2	52	357.33		

A5.1.5.2.2.5.10. EPM P63 1 minute intervals 5th interval Maximum velocity post hoc Newman Keuls test (MS effect)

Cell No.	Newman-Keuls test; variable 5. Maximum velocity (cm/s) (EPM P63 1 min tim Approximate Probabilities for Post Hoc Tests Error: Between MS = 357.33, df = 52.000 MS	{1} 17.557	{2} 29.072
1	0		0.022489
2	1	0.022489	

A5.1.5.2.2.5.11. EPM P63 1 minute intervals 5th interval Mean Velocity ANOVA

Effect	Univariate Tests of Significance for 5. Mean velocity (cm/s) (EPM P63 1 m Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	247.897	1	247.897	204.783	0.00000
MS	7.754	1	7.754	6.405	0.01443
Running	0.558	1	0.558	0.461	0.50008
Lesion	0.098	1	0.098	0.081	0.77616
MS*Running	1.037	1	1.037	0.857	0.35879
MS*Lesion	0.082	1	0.082	0.067	0.79565
Running*Lesion	0.207	1	0.207	0.171	0.68038
MS*Running*Lesion	0.049	1	0.049	0.040	0.84131
Error	62.947	52	1.210		

A5.1.5.2.2.5.12. EPM P63 1 minute intervals 5th interval Mean Velocity post hoc Newman Keuls test (MS effect)

	Newman-Keuls test; variable 5. Mean velocity (cm/s) (EPM P63 1 min time Approximate Probabilities for Post Hoc Tests Error: Between MS = 1.2105, df = 52.000		
Cell No.	MS	{1} 1.6964	{2} 2.3823
1	0		0.019676
2	1	0.019676	

A5.1.5.2.2.6.1. EPM P63 1 minute intervals Distance travelled repeated measures ANOVA

	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	9200621	1	9200621	1024.032	0.000000
MS	35866	1	35866	3.992	0.050963
Running	31576	1	31576	3.514	0.066459
Lesion	5318	1	5318	0.592	0.445175
MS*Running	1670	1	1670	0.186	0.668194
MS*Lesion	14908	1	14908	1.659	0.203398
Running*Lesion	347	1	347	0.039	0.845006
MS*Running*Lesion	13683	1	13683	1.523	0.222719
Error	467204	52	8985		
TIME	2059720	4	514930	235.716	0.000000
TIME*MS	18206	4	4552	2.084	0.084161
TIME*Running	7162	4	1791	0.820	0.513928
TIME*Lesion	5125	4	1281	0.586	0.672777
TIME*MS*Running	16561	4	4140	1.895	0.112521
TIME*MS*Lesion	14125	4	3531	1.616	0.171343
TIME*Running*Lesion	2153	4	538	0.246	0.911600
TIME*MS*Running*Lesion	3199	4	800	0.366	0.832603
Error	454383	208	2185		

A5.1.5.2.2.6.2. EPM P63 1 minute intervals Distance travelled repeated measures post hoc Newman Keuls test (TIME effect)

	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 2184.5, df = 208.00					
Cell No.	TIME	{1} 328.90	{2} 193.71	{3} 138.24	{4} 115.46	{5} 98.806
1	1. Total distance (cm		0.000009	0.000022	0.000008	0.000017
2	2. Total distance (cm	0.000009		0.000009	0.000022	0.000008
3	3. Total distance (cm	0.000022	0.000009		0.007606	0.000032
4	4. Total distance (cm	0.000008	0.000022	0.007606		0.050998
5	5. Total distance (cm	0.000017	0.000008	0.000032	0.050998	

A5.1.5.2.2.6.3. EPM P63 1 minute intervals Open Arm Duration repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1731.45(	1	1731.45(	29.8535{	0.00000
MS	43.521	1	43.521	0.7503{	0.39033
Running	64.93{	1	64.93{	1.1196{	0.2948{{
Lesion	147.73{	1	147.73{	2.5472{	0.11654{
MS*Running	0.317	1	0.317	0.0054{	0.94136
MS*Lesion	2.974	1	2.974	0.0512{	0.82174{
Running*Lesion	64.23{	1	64.23{	1.1075{	0.2974{{
MS*Running*Lesion	12.247	1	12.247	0.2111{	0.64777
Error	3015.89{	52	57.99{		
TIME	397.22{	4	99.30{	3.7510{	0.00571{
TIME*MS	58.26{	4	14.56{	0.5502(	0.6990{{
TIME*Running	43.627	4	10.907	0.4119{	0.79990{
TIME*Lesion	80.60(	4	20.15(	0.7611{	0.55167{
TIME*MS*Running	172.24(	4	43.06(	1.6264{	0.16881{
TIME*MS*Lesion	158.68{	4	39.671	1.4984{	0.20387{
TIME*Running*Lesion	239.23{	4	59.80{	2.2590{	0.06396{
TIME*MS*Running*Lesion	38.82{	4	9.706	0.3666{	0.83223{
Error	5506.66{	208	26.474		

A5.1.5.2.2.6.4. EPM P63 1 minute intervals Open Arm Duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 26.474, df = 208.00					
	TIME	{1} 4.2028	{2} 2.9611	{3} 2.5167	{4} 1.6583	{5} .78889
1	1. Duration in open arms ({		0.18625{	0.17126{	0.03415{	0.00260{
2	2. Duration in open arms ({	0.18625{		0.63613{	0.34780(	0.09519(
3	3. Duration in open arms ({	0.17126{	0.63613{		0.36088{	0.15689{
4	4. Duration in open arms ({	0.03415{	0.34780(	0.36088{		0.3547{{
5	5. Duration in open arms ({	0.00260{	0.09519(	0.15689{	0.3547{{	

A5.1.5.2.2.6.5. EPM P63 1 minute intervals Open Arm Frequency Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	132.1103	1	132.1103	75.84849	0.000000
MS	0.2651	1	0.2651	0.15217	0.698060
Running	6.6702	1	6.6702	3.82954	0.055736
Lesion	4.7124	1	4.7124	2.70552	0.106034
MS*Running	0.7198	1	0.7198	0.41326	0.523146
MS*Lesion	1.2484	1	1.2484	0.71673	0.401096
Running*Lesion	0.3031	1	0.3031	0.17404	0.678267
MS*Running*Lesion	0.0270	1	0.0270	0.01549	0.901444
Error	90.5718	52	1.7418		
TIME	59.9133	4	14.9783	14.58260	0.000000
TIME*MS	8.0733	4	2.0183	1.96501	0.101094
TIME*Running	2.7294	4	0.6823	0.66432	0.617450
TIME*Lesion	4.6428	4	1.1607	1.13002	0.343368
TIME*MS*Running	2.2281	4	0.5570	0.54231	0.704831
TIME*MS*Lesion	4.2950	4	1.0738	1.04538	0.384801
TIME*Running*Lesion	11.9310	4	2.9827	2.90393	0.022832
TIME*MS*Running*Lesion	1.4404	4	0.3601	0.35058	0.843444
Error	213.6444	208	1.0271		

A5.1.5.2.2.6.6. EPM P63 1 minute intervals Open Arm Frequency repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 1.0271, df = 208.00					
	TIME	{1} 1.4833	{2} .73333	{3} .51667	{4} .23333	{5} .30000
1	1. Frequency of entry into open arr		0.000058	0.000022	0.000017	0.000008
2	2. Frequency of entry into open arr	0.000058		0.241623	0.034771	0.050234
3	3. Frequency of entry into open arr	0.000022	0.241623		0.276243	0.241623
4	4. Frequency of entry into open arr	0.000017	0.034771	0.276243		0.718641
5	5. Frequency of entry into open arr	0.000008	0.050234	0.241623	0.718641	

A5.1.5.2.2.6.7. EPM P63 1 minute intervals Open Arm Frequency repeated measures post hoc Newman Keuls test (TIME*Running*Lesion)

Cell No.	Running	Lesion	TIME	{1} 1.7143	{2} 1.3571	{3} 1.0714	{4} .35714
	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 1.1701, df = 245.36						
1	0	0	1. Frequency of entry into open ar		0.60244	0.30934	0.01197
2	0	0	2. Frequency of entry into open ar	0.60244		0.44265	0.15226
3	0	0	3. Frequency of entry into open ar	0.30934	0.44265		0.53742
4	0	0	4. Frequency of entry into open ar	0.01197	0.15226	0.53742	
5	0	0	5. Frequency of entry into open ar	0.00926	0.14829	0.56909	0.99749
6	0	1	1. Frequency of entry into open ar	0.59913	0.48374	0.20146	0.00461
7	0	1	2. Frequency of entry into open ar	0.02046	0.19803	0.59778	0.90093
8	0	1	3. Frequency of entry into open ar	0.00844	0.12774	0.50937	0.99574
9	0	1	4. Frequency of entry into open ar	0.00945	0.14201	0.54728	0.99870
10	0	1	5. Frequency of entry into open ar	0.16345	0.44953	0.72706	0.90535
11	1	0	1. Frequency of entry into open ar	0.53952	0.77518	0.57373	0.13514
12	1	0	2. Frequency of entry into open ar	0.08652	0.38010	0.74180	0.93759
13	1	0	3. Frequency of entry into open ar	0.04578	0.27819	0.65608	0.95603
14	1	0	4. Frequency of entry into open ar	0.02104	0.21056	0.62952	0.98622
15	1	0	5. Frequency of entry into open ar	0.01615	0.19075	0.61914	0.99808
16	1	1	1. Frequency of entry into open ar	0.28801	0.54120	0.73599	0.76796
17	1	1	2. Frequency of entry into open ar	0.13044	0.44267	0.76847	0.92085
18	1	1	3. Frequency of entry into open ar	0.02593	0.20713	0.57984	0.96414
19	1	1	4. Frequency of entry into open ar	0.00792	0.12942	0.52775	0.99906
20	1	1	5. Frequency of entry into open ar	0.00239	0.05707	0.33187	0.99307

Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 1.1701, df = 245.36

Cell No.	Running	Lesion	TIME	{5} .28571	{6} 1.9231	{7} .30769	{8} .15385
1	0	0	1. Frequency of entry into open ar	0.00926	0.59913	0.02046	0.00844
2	0	0	2. Frequency of entry into open ar	0.14829	0.48374	0.19803	0.12774
3	0	0	3. Frequency of entry into open ar	0.56909	0.20146	0.59778	0.50937
4	0	0	4. Frequency of entry into open ar	0.99749	0.00461	0.90093	0.99574
5	0	0	5. Frequency of entry into open ar		0.00344	0.99831	0.94105
6	0	1	1. Frequency of entry into open ar	0.00344		0.00102	0.00027
7	0	1	2. Frequency of entry into open ar	0.99831	0.00102		0.99388
8	0	1	3. Frequency of entry into open ar	0.94105	0.00027	0.99388	
9	0	1	4. Frequency of entry into open ar	0.98739	0.00030	0.99846	1.00000
10	0	1	5. Frequency of entry into open ar	0.95297	0.03179	0.87847	0.85889
11	1	0	1. Frequency of entry into open ar	0.12860	0.48989	0.11426	0.06334
12	1	0	2. Frequency of entry into open ar	0.98844	0.02214	0.95514	0.97530
13	1	0	3. Frequency of entry into open ar	0.99728	0.00962	0.97673	0.99329
14	1	0	4. Frequency of entry into open ar	0.98313	0.00329	0.97274	0.98490
15	1	0	5. Frequency of entry into open ar	0.89899	0.00228	0.99785	0.83754
16	1	1	1. Frequency of entry into open ar	0.82803	0.12956	0.75919	0.71207
17	1	1	2. Frequency of entry into open ar	0.97288	0.03940	0.93155	0.94351
18	1	1	3. Frequency of entry into open ar	0.99943	0.00465	0.98430	0.99791
19	1	1	4. Frequency of entry into open ar	0.99437	0.00094	0.99929	0.99709
20	1	1	5. Frequency of entry into open ar	0.97966	0.00025	0.99439	0.98026

Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 1.1701, df = 245.36

Cell No.	Running	Lesion	TIME	{9} .15385	{10} .76923	{11} 1.4706	{12} .58824
1	0	0	1. Frequency of entry into open ar	0.00945	0.16345	0.53952	0.08652
2	0	0	2. Frequency of entry into open ar	0.14201	0.44953	0.77518	0.38010
3	0	0	3. Frequency of entry into open ar	0.54728	0.72706	0.57373	0.74180
4	0	0	4. Frequency of entry into open ar	0.99870	0.90535	0.13514	0.93759
5	0	0	5. Frequency of entry into open ar	0.98739	0.95297	0.12860	0.98844
6	0	1	1. Frequency of entry into open ar	0.00030	0.03179	0.48989	0.02214
7	0	1	2. Frequency of entry into open ar	0.99846	0.87847	0.11426	0.95514
8	0	1	3. Frequency of entry into open ar	1.00000	0.85889	0.06334	0.97530
9	0	1	4. Frequency of entry into open ar		0.88887	0.07055	0.98544
10	0	1	5. Frequency of entry into open ar	0.88887		0.39375	0.89187
11	1	0	1. Frequency of entry into open ar	0.07055	0.39375		0.21093
12	1	0	2. Frequency of entry into open ar	0.98544	0.89187	0.21093	
13	1	0	3. Frequency of entry into open ar	0.99696	0.87590	0.12639	0.75191
14	1	0	4. Frequency of entry into open ar	0.99667	0.93330	0.06891	0.96925
15	1	0	5. Frequency of entry into open ar	0.97709	0.94332	0.05563	0.98120
16	1	1	1. Frequency of entry into open ar	0.75087	0.67183	0.53599	0.81561
17	1	1	2. Frequency of entry into open ar	0.96115	0.83698	0.35878	0.80267
18	1	1	3. Frequency of entry into open ar	0.99931	0.85884	0.12798	0.85317
19	1	1	4. Frequency of entry into open ar	0.94211	0.92351	0.06249	0.98599
20	1	1	5. Frequency of entry into open ar	0.92064	0.80645	0.02425	0.94600

Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 1.1701, df = 245.36

Cell No.	Running	Lesion	TIME	{13} .47059	{14} .29412	{15} .23529	{16} .93750
1	0	0	1. Frequency of entry into open ar	0.04578	0.02104	0.01615	0.28801
2	0	0	2. Frequency of entry into open ar	0.27819	0.21056	0.19075	0.54120
3	0	0	3. Frequency of entry into open ar	0.65608	0.62952	0.61914	0.73599
4	0	0	4. Frequency of entry into open ar	0.95603	0.98622	0.99808	0.76796
5	0	0	5. Frequency of entry into open ar	0.99728	0.98313	0.89899	0.82803
6	0	1	1. Frequency of entry into open ar	0.00962	0.00329	0.00228	0.12956
7	0	1	2. Frequency of entry into open ar	0.97673	0.97274	0.99785	0.75919
8	0	1	3. Frequency of entry into open ar	0.99329	0.98490	0.83754	0.71207
9	0	1	4. Frequency of entry into open ar	0.99696	0.99667	0.97709	0.75087
10	0	1	5. Frequency of entry into open ar	0.87590	0.93330	0.94332	0.67183
11	1	0	1. Frequency of entry into open ar	0.12639	0.06891	0.05563	0.53599
12	1	0	2. Frequency of entry into open ar	0.75191	0.96925	0.98120	0.81561
13	1	0	3. Frequency of entry into open ar		0.98967	0.99577	0.76547
14	1	0	4. Frequency of entry into open ar	0.98967		0.98632	0.79422
15	1	0	5. Frequency of entry into open ar	0.99577	0.98632		0.79925
16	1	1	1. Frequency of entry into open ar	0.76547	0.79422	0.79925	
17	1	1	2. Frequency of entry into open ar	0.84847	0.95624	0.96840	0.77992
18	1	1	3. Frequency of entry into open ar	0.80984	0.99701	0.99929	0.65686
19	1	1	4. Frequency of entry into open ar	0.99730	0.99822	0.99253	0.64195
20	1	1	5. Frequency of entry into open ar	0.98424	0.99004	0.97626	0.42635

Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 1.1701, df = 245.36

Cell No.	Running	Lesion	TIME	{17} .68750	{18} .37500	{19} .12500	{20} 0.0000
1	0	0	1. Frequency of entry into open ar	0.13044	0.02593	0.00792	0.00239
2	0	0	2. Frequency of entry into open ar	0.44267	0.20713	0.12942	0.05707
3	0	0	3. Frequency of entry into open ar	0.76847	0.57984	0.52775	0.33187
4	0	0	4. Frequency of entry into open ar	0.92085	0.96414	0.99906	0.99307
5	0	0	5. Frequency of entry into open ar	0.97288	0.99943	0.99437	0.97966
6	0	1	1. Frequency of entry into open ar	0.03940	0.00465	0.00094	0.00025
7	0	1	2. Frequency of entry into open ar	0.93155	0.98430	0.99929	0.99439
8	0	1	3. Frequency of entry into open ar	0.94351	0.99791	0.99709	0.98026
9	0	1	4. Frequency of entry into open ar	0.96115	0.99931	0.94211	0.92064
10	0	1	5. Frequency of entry into open ar	0.83698	0.85884	0.92351	0.80645
11	1	0	1. Frequency of entry into open ar	0.35878	0.12798	0.06249	0.02425
12	1	0	2. Frequency of entry into open ar	0.80267	0.85317	0.98599	0.94600
13	1	0	3. Frequency of entry into open ar	0.84847	0.80984	0.99730	0.98424
14	1	0	4. Frequency of entry into open ar	0.95624	0.99701	0.99822	0.99004
15	1	0	5. Frequency of entry into open ar	0.96840	0.99929	0.99253	0.97626
16	1	1	1. Frequency of entry into open ar	0.77992	0.65686	0.64195	0.42635
17	1	1	2. Frequency of entry into open ar		0.83551	0.93787	0.82559
18	1	1	3. Frequency of entry into open ar	0.83551		0.99911	0.99189
19	1	1	4. Frequency of entry into open ar	0.93787	0.99911		0.73696
20	1	1	5. Frequency of entry into open ar	0.82559	0.99189	0.73696	

A5.1.5.2.2.6.8. EPM P63 1 minute intervals Closed Arm Duration Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	420116.5	1	420116.5	1088.992	0.00000(
MS	167.8	1	167.8	0.435	0.512435
Running	774.8	1	774.8	2.008	0.162401
Lesion	1165.9	1	1165.9	3.022	0.088057
MS*Running	106.2	1	106.2	0.275	0.602017
MS*Lesion	13.1	1	13.1	0.034	0.854628
Running*Lesion	1080.0	1	1080.0	2.800	0.100293
MS*Running*Lesion	34.2	1	34.2	0.089	0.767064
Error	20060.8	52	385.8		
TIME	1498.5	4	374.6	3.628	0.007003
TIME*MS	204.4	4	51.1	0.495	0.739620
TIME*Running	240.7	4	60.2	0.583	0.675462
TIME*Lesion	148.9	4	37.2	0.360	0.836538
TIME*MS*Running	473.7	4	118.4	1.147	0.335672
TIME*MS*Lesion	716.5	4	179.1	1.734	0.143644
TIME*Running*Lesion	689.4	4	172.4	1.669	0.158459
TIME*MS*Running*Lesion	230.9	4	57.7	0.559	0.692715
Error	21481.0	208	103.3		

A5.1.5.2.2.6.9. EPM P63 1 minute intervals Closed Arm duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 103.27, df = 208.00					
	TIME	{1} 35.108	{2} 35.619	{3} 38.781	{4} 41.092	{5} 38.603
1	1. Duration in closed arms (s		0.78297(	0.19580{	0.01105{	0.14347{
2	2. Duration in closed arms (s	0.78297(		0.20374{	0.01680{	0.10786{
3	3. Duration in closed arms (s	0.19580{	0.20374{		0.21291{	0.92367{
4	4. Duration in closed arms (s	0.01105{	0.01680{	0.21291{		0.37218(
5	5. Duration in closed arms (s	0.14347{	0.10786{	0.92367{	0.37218(	

A5.1.5.2.2.6.10. EPM P63 1 minute intervals Central Square Duration repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	22325.79	1	22325.79	73.80847	0.000000
MS	90.78	1	90.78	0.30013	0.586102
Running	285.59	1	285.59	0.94415	0.335628
Lesion	366.17	1	366.17	1.21056	0.276194
MS*Running	62.26	1	62.26	0.20584	0.651904
MS*Lesion	72.25	1	72.25	0.23885	0.627058
Running*Lesion	485.18	1	485.18	1.60398	0.210878
MS*Running*Lesion	40.36	1	40.36	0.13343	0.716354
Error	16031.58	53	302.48		
TIME	736.20	4	184.05	2.43313	0.048522
TIME*MS	157.47	4	39.37	0.52044	0.720803
TIME*Running	255.85	4	63.96	0.84557	0.497707
TIME*Lesion	59.07	4	14.77	0.19521	0.940701
TIME*MS*Running	118.01	4	29.50	0.39003	0.815657
TIME*MS*Lesion	229.48	4	57.37	0.75844	0.553412
TIME*Running*Lesion	219.29	4	54.82	0.72477	0.575893
TIME*MS*Running*Lesion	114.64	4	28.66	0.37887	0.823589
Error	16036.28	212	75.64		

A5.1.5.2.2.6.11. EPM P63 1 minute interval Central Square Duration repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 75.643, df = 212.00 TIME	{1} 9.6421	{2} 10.369	{3} 7.5956	{4} 6.1557	{5} 9.4508
1	1. Duration in central square (		0.644448	0.395452	0.119454	0.903348
2	2. Duration in central square (	0.644448		0.292340	0.057669	0.829267
3	3. Duration in central square (	0.395452	0.292340		0.360568	0.238789
4	4. Duration in central square (	0.119454	0.057669	0.360568		0.091399
5	5. Duration in central square (	0.903348	0.829267	0.238789	0.091399	

A5.1.5.2.2.6.12. EPM P63 1 minute intervals Maximum Velocity repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	250020.1	1	250020.1	451.9525	0.00000(
MS	1649.1	1	1649.1	2.981(	0.09018⁴
Running	26.9	1	26.9	0.0487	0.826267
Lesion	111.7	1	111.7	0.201(	0.65507⁴
MS*Running	1096.(	1	1096.(	1.982(	0.165047
MS*Lesion	5.0	1	5.0	0.0091	0.92437⁴
Running*Lesion	204.1	1	204.1	0.368(	0.54627(
MS*Running*Lesion	0.0	1	0.0	0.000(	0.997881
Error	28766.⁴	52	553.2		
TIME	11543.5	4	2885.(	28.346(	0.00000(
TIME*MS	844.(	4	211.(	2.072(	0.085601
TIME*Running	40.9	4	10.2	0.100(	0.98217⁴
TIME*Lesion	392.4	4	98.1	0.963(	0.428462
TIME*MS*Running	362.4	4	90.6	0.889(	0.47091(
TIME*MS*Lesion	328.4	4	82.1	0.806(	0.522355
TIME*Running*Lesion	146.(	4	36.7	0.360(	0.836324
TIME*MS*Running*Lesion	647.(	4	161.(	1.590⁴	0.178095
Error	21175.5	208	101.8		

A5.1.5.2.2.6.13. EPM P63 1 minute intervals Maximum Velocity repeated measures Post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = 101.81, df = 208.00					
	TIME	{1} 39.955	{2} 31.525	{3} 27.112	{4} 23.467	{5} 22.931
1	1. Maximum velocity (cm/		0.000013	0.000022	0.000008	0.000017
2	2. Maximum velocity (cm/	0.000013		0.016620	0.000056	0.000025
3	3. Maximum velocity (cm/	0.000022	0.016620		0.047857	0.060072
4	4. Maximum velocity (cm/	0.000008	0.000056	0.047857		0.770734
5	5. Maximum velocity (cm/	0.000017	0.000025	0.060072	0.770734	

A5.1.5.2.2.6.14. EPM P63 1 minute intervals Mean Velocity repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM P63 1 min timel Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	3831.99	1	3831.99	1024.03	0.00000
MS	14.938	1	14.938	3.992	0.050963
Running	13.151	1	13.151	3.514	0.06645
Lesion	2.215	1	2.215	0.592	0.44517
MS*Running	0.695	1	0.695	0.186	0.66819
MS*Lesion	6.209	1	6.209	1.659	0.20339
Running*Lesion	0.144	1	0.144	0.039	0.84500
MS*Running*Lesion	5.699	1	5.699	1.523	0.22271
Error	194.588	52	3.742		
TIME	857.860	4	214.465	235.716	0.00000
TIME*MS	7.583	4	1.896	2.084	0.08416
TIME*Running	2.983	4	0.746	0.820	0.51392
TIME*Lesion	2.134	4	0.534	0.586	0.67277
TIME*MS*Running	6.897	4	1.724	1.895	0.11252
TIME*MS*Lesion	5.883	4	1.471	1.616	0.17134
TIME*Running*Lesion	0.897	4	0.224	0.246	0.91160
TIME*MS*Running*Lesion	1.332	4	0.333	0.366	0.83260
Error	189.248	208	0.910		

A5.1.5.2.2.6.15. EPM P63 1 minute intervals Mean Velocity Repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM P63 1 min timebins) Approximate Probabilities for Post Hoc Tests Error: Within MS = .90984, df = 208.00					
	TIME	{1} 6.7122	{2} 3.9533	{3} 2.8212	{4} 2.3563	{5} 2.0165
1	1. Mean velocity (cm/s		0.00000	0.00002	0.00000	0.00001
2	2. Mean velocity (cm/s	0.00000		0.00000	0.00002	0.00000
3	3. Mean velocity (cm/s	0.00002	0.00000		0.00760	0.00003
4	4. Mean velocity (cm/s	0.00000	0.00002	0.00760		0.05099
5	5. Mean velocity (cm/s	0.00001	0.00000	0.00003	0.05099	

A5.1.5.3.1. EPM P49 and P63 Full Five Minutes Distance Travelled repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	15757976	1	15757976	2053.83	0.00000
MS	41562(	1	41562(	5.417	0.02386
Running	89837(	1	89837(	11.70	0.00121
Lesion	48813	1	48813	0.636	0.42871
MS*Running	26064	1	26064	0.34(	0.56251
MS*Lesion	73067	1	73067	0.952	0.33364
Running*Lesion	28234	1	28234	0.368	0.54674
MS*Running*Lesion	2276(	1	2276(	0.297	0.58832
Error	398968	52	7672		
TIME	803110(	1	803110(	151.94	0.00000
TIME*MS	2508	1	2508	0.047	0.82841
TIME*Running	10074	1	10074	1.906	0.17330
TIME*Lesion	5387	1	5387	0.102	0.75080
TIME*MS*Running	1795	1	1795	0.34(	0.56253
TIME*MS*Lesion	4360(	1	4360(	0.825	0.36794
TIME*Running*Lesion	2683	1	2683	0.508	0.47932
TIME*MS*Running*Lesion	19380	1	19380	3.667	0.06101
Error	274848	52	5285		

A5.1.5.3.2. EPM P49 and P63 Full Five Minutes Distance travelled repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 52855., df = 52.000 TIME	{1} 1403.1	{2} 885.41
1	P49 Total distance (cm		0.00011
2	P63 Total distance (cm	0.00011	

A5.1.5.3.3. EPM P49 and P63 Full Five Minutes Open Arm Duration Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	56949.2	1	56949.2	147.577	0.00000
MS	93.25	1	93.25	0.241	0.62509
Running	339.40	1	339.40	0.879	0.35266
Lesion	1.48	1	1.48	0.003	0.95081
MS*Running	0.08	1	0.08	0.000	0.98877
MS*Lesion	157.98	1	157.98	0.409	0.52508
Running*Lesion	57.37	1	57.37	0.148	0.70139
MS*Running*Lesion	8.22	1	8.22	0.021	0.88452
Error	20066.4	52	385.89		
TIME	14396.7	1	14396.7	57.163	0.00000
TIME*MS	13.11	1	13.11	0.052	0.82041
TIME*Running	48.46	1	48.46	0.192	0.66272
TIME*Lesion	534.80	1	534.80	2.123	0.15107
TIME*MS*Running	28.53	1	28.53	0.113	0.73780
TIME*MS*Lesion	2.10	1	2.10	0.008	0.92767
TIME*Running*Lesion	8.11	1	8.11	0.032	0.85825
TIME*MS*Running*Lesion	38.55	1	38.55	0.153	0.69721
Error	13096.2	52	251.85		

A5.1.5.3.4. EPM P49 and P63 Full Five Minutes Open Arm Duration Repeated Measures post hoc test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 251.85, df = 52.000 TIME	{1} 32.708	{2} 10.906
1	P49 Duration in open arms (s)		0.000114
2	P63 Duration in open arms (s	0.000114	

A5.1.5.3.5. EPM P49 and P63 Full Five Minutes Open Arm Frequency Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2775.06	1	2775.06	238.660	0.00000
MS	1.626	1	1.626	0.139	0.70999
Running	11.809	1	11.809	1.015	0.31824
Lesion	15.004	1	15.004	1.290	0.26118
MS*Running	1.484	1	1.484	0.127	0.72232
MS*Lesion	21.478	1	21.478	1.847	0.17998
Running*Lesion	0.022	1	0.022	0.001	0.96513
MS*Running*Lesion	4.830	1	4.830	0.415	0.52206
Error	604.640	52	11.628		
TIME	420.950	1	420.950	55.891	0.00000
TIME*MS	0.006	1	0.006	0.000	0.97775
TIME*Running	4.379	1	4.379	0.581	0.44920
TIME*Lesion	0.490	1	0.490	0.065	0.79961
TIME*MS*Running	0.859	1	0.859	0.114	0.73691
TIME*MS*Lesion	0.729	1	0.729	0.096	0.75689
TIME*Running*Lesion	0.022	1	0.022	0.003	0.95669
TIME*MS*Running*Lesion	2.904	1	2.904	0.385	0.53736
Error	391.640	52	7.532		

A5.1.5.3.6. EPM P49 and P63 Full Five Minutes Open Arm Frequency Repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreads Approximate Probabilities for Post Hoc Tests Error: Within MS = 7.5315, df = 52.000 TIME	{1} 6.7333	{2} 2.9167
1	P49 Frequency of entry into open arms		0.00011
2	P63 Frequency of entry into open arm	0.00011	

A5.1.5.3.7. EPM P49 and P63 Full Five Minutes Closed Arm Duration Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	415363(	1	415363(	2351.49:	0.00000(
MS	1252	1	1252	0.709	0.40361!
Running	879	1	879	0.497	0.48377:
Lesion	1139	1	1139	0.645	0.42560:
MS*Running	195	1	195	0.11(	0.74092:
MS*Lesion	94	1	94	0.053	0.81815!
Running*Lesion	2585	1	2585	1.463	0.23185'
MS*Running*Lesion	409	1	409	0.231	0.63256(
Error	91852	52	1766		
TIME	429(	1	429(	3.78(	0.05727:
TIME*MS	12	1	12	0.01(	0.92017!
TIME*Running	913	1	913	0.804	0.37391:
TIME*Lesion	2254	1	2254	1.986	0.16471(
TIME*MS*Running	495	1	495	0.436	0.51178!
TIME*MS*Lesion	265	1	265	0.233	0.63102(
TIME*Running*Lesion	652	1	652	0.574	0.45199(
TIME*MS*Running*Lesion	8	1	8	0.007	0.93181(
Error	59012	52	1135		

A5.1.5.3.8. EPM P49 and P63 Full Five Minutes Central Square Duration Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	171339.4	1	171339.4	165.799	0.00000
MS	679.0	1	679.0	0.657(	0.42130
Running	118.7	1	118.7	0.114	0.73601
Lesion	1037.4	1	1037.4	1.003	0.32100
MS*Running	193.9	1	193.9	0.187(	0.66670
MS*Lesion	10.1	1	10.1	0.009	0.92155
Running*Lesion	1844.2	1	1844.2	1.784(	0.18740
MS*Running*Lesion	289.8	1	289.8	0.280	0.59868
Error	53737.5	52	1033.4		
TIME	2933.6	1	2933.6	3.735	0.05872
TIME*MS	0.0	1	0.0	0.000(	0.99730
TIME*Running	1358.1	1	1358.1	1.729	0.19427
TIME*Lesion	577.2	1	577.2	0.734	0.39521
TIME*MS*Running	275.2	1	275.2	0.350	0.55644
TIME*MS*Lesion	325.7	1	325.7	0.414	0.52241
TIME*Running*Lesion	499.8	1	499.8	0.636	0.42864
TIME*MS*Running*Lesion	77.1	1	77.1	0.098	0.75525
Error	40837.9	52	785.3		

A5.1.5.3.9. EPM P49 and P63 Full Five Minutes Maximum Velocity Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	115923	1	115923	25.2779	0.00000
MS	889	1	889	0.1939	0.66146
Running	3490	1	3490	0.7611	0.38697
Lesion	1375	1	1375	0.2998	0.58631
MS*Running	2695	1	2695	0.5877	0.44674
MS*Lesion	113	1	113	0.0246	0.87582
Running*Lesion	1207	1	1207	2.6333	0.11069
MS*Running*Lesion	1402	1	1402	0.3059	0.58257
Error	238469	52	4586		
TIME	3383	1	3383	7.5745	0.00813
TIME*MS	132	1	132	0.0296	0.86405
TIME*Running	5337	1	5337	1.1949	0.27936
TIME*Lesion	1997	1	1997	0.4472	0.50660
TIME*MS*Running	3621	1	3621	0.8109	0.37199
TIME*MS*Lesion	521	1	521	0.1167	0.73396
TIME*Running*Lesion	8301	1	8301	1.8587	0.17864
TIME*MS*Running*Lesion	398	1	398	0.0891	0.76640
Error	232247	52	4466		

A5.1.5.3.10. EPM P49 and P63 Full Five Minutes Maximum Velocity Repeated Measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 44663., df = 52.000 TIME	{1} 155.63	{2} 45.160
1	P49 Maximum velocity (cm/		0.00616
2	P63 Maximum velocity (cm/	0.00616	

A5.1.5.3.11. EPM P49 and P63 Full Five Minutes Mean Velocity Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures s Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	2599.10	1	2599.10	2017.74	0.00000
MS	6.913	1	6.913	5.367	0.02449
Running	14.875	1	14.875	11.548	0.00130
Lesion	0.815	1	0.815	0.633	0.42985
MS*Running	0.427	1	0.427	0.331	0.56748
MS*Lesion	1.189	1	1.189	0.923	0.34114
Running*Lesion	0.585	1	0.585	0.454	0.50340
MS*Running*Lesion	0.389	1	0.389	0.302	0.58482
Error	66.982	52	1.288		
TIME	135.587	1	135.587	147.952	0.00000
TIME*MS	0.039	1	0.039	0.042	0.83812
TIME*Running	1.667	1	1.667	1.820	0.18321
TIME*Lesion	0.092	1	0.092	0.100	0.75309
TIME*MS*Running	0.310	1	0.310	0.338	0.56324
TIME*MS*Lesion	0.745	1	0.745	0.813	0.37149
TIME*Running*Lesion	0.537	1	0.537	0.586	0.44744
TIME*MS*Running*Lesion	3.168	1	3.168	3.457	0.06866
Error	47.654	52	0.916		

A5.1.5.3.12. EPM P49 and P63 Full Five Minutes Mean Velocity Repeated Measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = .91643, df = 52.000 TIME	{1} 5.7106	{2} 3.5835
1	P49 Mean velocity (cm/s		0.00011
2	P63 Mean velocity (cm/s	0.00011	

A5.1.5.4.1.1. EPM P49 Non-MS only Descriptive Statistics

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Total distance (cm) Mean	Total distance (cm) Std.Dev.	Total distance (cm) Std.Err	Total distance (cm) -95.00%	Total distance (cm) +95.00%
Total			31	1346.75	289.162	51.935	1240.69	1452.82
Running	0		14	1503.06	289.026	77.245	1336.18	1669.94
Running	1		17	1218.03	223.434	54.190	1103.15	1332.91
Lesion	0		16	1352.57	234.546	58.636	1227.59	1477.55
Lesion	1		15	1340.55	346.632	89.500	1148.59	1532.51
Running*Lesi	0	0	7	1487.14	244.973	92.591	1260.57	1713.70
Running*Lesi	0	1	7	1518.98	346.975	131.144	1198.08	1839.88
Running*Lesi	1	0	9	1247.90	173.116	57.705	1114.83	1380.97
Running*Lesi	1	1	8	1184.43	278.247	98.375	951.81	1417.05

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Duration in open arms (s) Mean	Duration in open arms (s) Std.Dev.	Duration in open arms (s) Std.Err	Duration in open arms (s) -95.00%	Duration in open arms (s) +95.00%
Total			31	33.1564	21.3372	3.83228	25.3299	40.9830
Running	0		14	36.3668	23.1706	6.19261	22.9885	49.7452
Running	1		17	30.5126	20.0247	4.85670	20.2168	40.8083
Lesion	0		16	30.1752	18.8489	4.71223	20.1313	40.2191
Lesion	1		15	36.3365	23.9571	6.18571	23.0694	49.6035
Running*Lesi	0	0	7	32.9312	22.1318	8.36504	12.4626	53.3997
Running*Lesi	0	1	7	39.8025	25.4141	9.60563	16.2984	63.3067
Running*Lesi	1	0	9	28.0316	16.9403	5.64679	15.0101	41.0532
Running*Lesi	1	1	8	33.3037	23.9114	8.45396	13.3132	53.2941

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Frequency of entry into open arms Mean	Frequency of entry into open arms Std.Dev.	Frequency of entry into open arms Std.Err	Frequency of entry into open arms -95.00%	Frequency of entry into open arms +95.00%
Total			31	6.61290	3.47061	0.62334	5.33987	7.88593
Running	0		14	6.71428	3.42902	0.91644	4.73442	8.69415
Running	1		17	6.52941	3.60759	0.87496	4.67456	8.38426
Lesion	0		16	6.43750	2.80401	0.70100	4.94334	7.93165
Lesion	1		15	6.80000	4.16104	1.07437	4.49569	9.10431
Running*Lesio	0	0	7	6.14285	3.33809	1.26168	3.05563	9.23008
Running*Lesio	0	1	7	7.28571	3.68394	1.39239	3.87863	10.6927
Running*Lesio	1	0	9	6.66666	2.50000	0.83333	4.74499	8.58834
Running*Lesio	1	1	8	6.37500	4.74906	1.67904	2.40468	10.3453

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level c Factor	Level of Factor	N	Duration ir central square (s) Mean	Duration ir central square (s) Std.Dev.	Duration ir central square (s) Std.Err	Duration ir central square (s) -95.00%	Duration ir central square (s) +95.00%
Total			31	35.6045	19.0050	3.4134	28.6334	42.5756
Running	0		14	33.3130	11.6100	3.1029	26.6096	40.0165
Running	1		17	37.4916	23.6503	5.7360	25.3318	49.6515
Lesion	0		16	34.9654	12.6668	3.1667	28.2157	41.7151
Lesion	1		15	36.2863	24.5175	6.3303	22.7089	49.8636
Running*Lesic	0	0	7	33.8338	10.9953	4.1558	23.6648	44.0029
Running*Lesic	0	1	7	32.7922	13.0584	4.9356	20.7152	44.8693
Running*Lesic	1	0	9	35.8455	14.4283	4.8094	24.7549	46.9362
Running*Lesic	1	1	8	39.3436	32.1428	11.3642	12.4715	66.2156

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level c Factor	Level of Factor	N	Maximum velocity (cm/s) Mean	Maximum velocity (cm/s) Std.Dev.	Maximum velocity (cm/s) Std.Err	Maximum velocity (cm/s) -95.00%	Maximum velocity (cm/s) +95.00%
Total			31	139.174	221.301	39.747	58.00	220.348
Running	0		14	134.586	226.642	60.572	3.727	265.445
Running	1		17	142.953	223.736	54.264	27.918	257.987
Lesion	0		16	121.880	212.938	53.234	8.414	235.347
Lesion	1		15	157.621	235.918	60.913	26.974	288.268
Running*Lesic	0	0	7	162.281	297.451	112.426	-112.81	437.378
Running*Lesic	0	1	7	106.890	145.007	54.807	-27.219	241.000
Running*Lesic	1	0	9	90.457	126.965	42.321	-7.137	188.051
Running*Lesic	1	1	8	202.010	297.432	105.158	-46.649	450.670

Effect	Descriptive Statistics (P49 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Mean velocity (cm/s) Mean	Mean velocity (cm/s) Std.Dev.	Mean velocity (cm/s) Std.Err	Mean velocity (cm/s) -95.00%	Mean velocity (cm/s) +95.00%
Total			31	5.47975	1.19172	0.21404	5.04263	5.91688
Running	0		14	6.11691	1.18431	0.31652	5.43311	6.80071
Running	1		17	4.95504	0.93569	0.22694	4.47395	5.43613
Lesion	0		16	5.50415	0.98833	0.24708	4.97751	6.03080
Lesion	1		15	5.45373	1.41256	0.36472	4.67148	6.23598
Running*Lesic	0	0	7	6.06789	1.04204	0.39385	5.10416	7.03163
Running*Lesic	0	1	7	6.16593	1.39552	0.52745	4.87529	7.45658
Running*Lesic	1	0	9	5.06569	0.72300	0.24100	4.50994	5.62144
Running*Lesic	1	1	8	4.83055	1.17061	0.41387	3.85189	5.80921

A5.1.5.4.1.2. EPM P49 Non-MS only Distance travelled ANOVA

Univariate Tests of Significance for Total distance (cm) (P49 Full five minutes
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	5667969	1	5667969	820.947	0.00000
Running	63091	1	63091	9.1382	0.00543
Lesion	1917	1	1917	0.0278	0.86889
Running*Lesion	17411	1	17411	0.2522	0.61961
Error	186412	27	6904		

A5.1.5.4.1.3. EPM P49 Non-MS only distance travelled post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total distance (cm) (P49 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 69042., df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 1503.1	{2} 1218.0
1	0		0.00582
2	1	0.00582	

A5.1.5.4.1.4. EPM P49 Non-MS only Duration in open Arms ANOVA

Univariate Tests of Significance for Duration in open arms (s) (P49 Full five m
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	34445.5	1	34445.5	70.9281	0.00000
Running	248.98	1	248.98	0.5126	0.48012
Lesion	282.59	1	282.59	0.5818	0.45218
Running*Lesion	4.90	1	4.90	0.0100	0.92071
Error	13112.2	27	485.64		

A5.1.5.4.1.5. EPM P49 Non-MS only Frequency of entry into open arms ANOVA

Univariate Tests of Significance for Frequency of entry into open arms (P49 Fu
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1342.73	1	1342.73	101.790	0.00000
Running	0.287	1	0.287	0.0217	0.88385
Lesion	1.388	1	1.388	0.1053	0.74811
Running*Lesion	3.944	1	3.944	0.2990	0.58902
Error	356.16	27	13.191		

A5.1.5.4.1.6. EPM P49 Non-MS only Duration in central square ANOVA

Univariate Tests of Significance for Duration in central square (s) (P49 Full five
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	38540.8	1	38540.8	97.7449	0.00000
Running	140.52	1	140.52	0.3563	0.55550
Lesion	11.56	1	11.56	0.0293	0.86530
Running*Lesion	39.49	1	39.49	0.1001	0.75407
Error	10646.1	27	394.30		

A5.1.5.4.1.7. EPM P49 Non-MS only Maximum velocity ANOVA

Univariate Tests of Significance for Maximum velocity (cm/s) (P49 Full five mi
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	60449	1	604492.5	11.6144	0.00206
Running	104(	1	1040.(	0.0199	0.88863
Lesion	604	1	6044.7	0.1161	0.73589
Running*Lesion	5340	1	53409.2	1.0261	0.32004
Error	140525	27	52046.4		

A5.1.5.4.1.8. EPM P49 Non-MS only Mean Velocity ANOVA

Univariate Tests of Significance for Mean velocity (cm/s) (P49 Full five minute
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	938.514	1	938.514	792.504	0.00000
Running	10.471	1	10.471	8.842	0.00612
Lesion	0.036(	1	0.036(	0.030	0.86284
Running*Lesion	0.212	1	0.212	0.179	0.67504
Error	31.974	27	1.184		

A5.1.5.4.1.9. EPM P49 Non-MS only Mean Velocity post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Mean velocity (cm/s) (P49 Full five minutes spread
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 1.1842, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 6.1169	{2} 4.9550
1	0		0.006514
2	1	0.006514	

A5.1.5.4.2.1. EPM P63 Non-MS only Descriptive Statistics

Descriptive Statistics (P63 Full five minutes spreadsheet)
Include condition: MS=0

Effect	Level c Factor	Level of Factor	N	Total distance (cm) Mean	Total distance (cm) Std.Dev.	Total distance (cm) Std.Err	Total distance (cm) -95.00%	Total distance (cm) +95.00%
Total			32	827.205	237.615	42.0049	741.535	912.87
Running	0		15	896.109	246.406	63.6219	759.653	1032.56
Running	1		17	766.407	218.834	53.0752	653.892	878.92
Lesion	0		17	812.198	261.935	63.5287	677.523	946.87
Lesion	1		15	844.212	214.537	55.3933	725.405	963.02
Running*Lesi	0	0	8	910.268	272.463	96.3304	682.483	1138.05
Running*Lesi	0	1	7	879.927	233.429	88.2279	664.041	1095.81
Running*Lesi	1	0	9	725.025	232.587	77.5290	546.242	903.80
Running*Lesi	1	1	8	812.962	207.258	73.2769	639.689	986.23

Descriptive Statistics (P63 Full five minutes spreadsheet)
Include condition: MS=0

Effect	Level c Factor	Level of Factor	N	Duration in open arms (s) Mean	Duration in open arms (s) Std.Dev.	Duration in open arms (s) Std.Err	Duration in open arms (s) -95.00%	Duration in open arms (s) +95.00%
Total			32	14.1562	20.8610	3.68775	6.6350	21.6774
Running	0		15	17.1444	21.0795	5.44272	5.4709	28.8179
Running	1		17	11.5196	20.9429	5.07941	0.7517	22.2874
Lesion	0		17	16.7450	24.4070	5.91958	4.1961	29.2940
Lesion	1		15	11.2222	16.2927	4.20677	2.1995	20.2448
Running*Lesio	0	0	8	22.9583	25.9345	9.16924	1.2765	44.6401
Running*Lesio	0	1	7	10.5000	12.4714	4.71376	-1.0341	22.0341
Running*Lesio	1	0	9	11.2222	23.0209	7.67365	-6.4732	28.9177
Running*Lesio	1	1	8	11.8541	19.9151	7.04107	-4.7953	28.5036

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Frequency of entry into open arms Mean	Frequency of entry into open arms Std.Dev.	Frequency of entry into open arms Std.Err	Frequency of entry into open arms -95.00%	Frequency of entry into open arms +95.00%
Total			32	3.00000	2.60272	0.46010	2.06161	3.93838
Running	0		15	3.53333	2.64214	0.68220	2.07016	4.99650
Running	1		17	2.52941	2.55239	0.61904	1.21709	3.84173
Lesion	0		17	3.23529	2.99018	0.72522	1.69788	4.77270
Lesion	1		15	2.73333	2.15362	0.55606	1.54069	3.92597
Running*Lesic	0	0	8	3.87500	3.13676	1.10901	1.25260	6.49740
Running*Lesic	0	1	7	3.14285	2.11570	0.79966	1.18616	5.09955
Running*Lesic	1	0	9	2.66666	2.91547	0.97182	0.42563	4.90770
Running*Lesic	1	1	8	2.37500	2.26384	0.80039	0.48237	4.26762

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Duration in centra square (s) Mean	Duration in centra square (s) Std.Dev.	Duration in centra square (s) Std.Err	Duration in centra square (s) -95.00%	Duration in centra square (s) +95.00%
Total			32	46.8489	42.3164	7.4805	31.5922	62.1056
Running	0		15	50.0222	34.6020	8.9342	30.8602	69.1841
Running	1		17	44.0490	49.0310	11.8917	18.8395	69.2584
Lesion	0		17	54.2646	48.0973	11.6653	29.5353	78.9940
Lesion	1		15	38.4444	34.3335	8.8648	19.4311	57.4577
Running*Lesic	0	0	8	62.0624	33.7094	11.9180	33.8807	90.2442
Running*Lesic	0	1	7	36.2618	32.4623	12.2696	6.2392	66.2845
Running*Lesic	1	0	9	47.3333	59.3091	19.7697	1.7442	92.9223
Running*Lesic	1	1	8	40.3541	38.0183	13.4415	8.5700	72.1382

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet) Include condition: MS=0							
	Level c Factor	Level of Factor	N	Maximum velocity (cm/s) Mean	Maximum velocity (cm/s) Std.Dev.	Maximum velocity (cm/s) Std.Err	Maximum velocity (cm/s) -95.00%	Maximum velocity (cm/s) +95.00%
Total			32	39.8166	8.3002	1.46729	36.8241	42.8092
Running	0		15	41.4056	9.3118	2.40430	36.2488	46.5623
Running	1		17	38.4146	7.2908	1.76828	34.6661	42.1632
Lesion	0		17	38.3997	7.5674	1.83537	34.5089	42.2905
Lesion	1		15	41.4225	9.0500	2.33670	36.4108	46.4343
Running*Lesic	0	0	8	40.1895	6.6040	2.33487	34.6684	45.7106
Running*Lesic	0	1	7	42.7953	12.1332	4.58594	31.5739	54.0167
Running*Lesic	1	0	9	36.8087	8.3857	2.79524	30.3629	43.2546
Running*Lesic	1	1	8	40.2213	5.8384	2.06419	35.3402	45.1023

Effect	Descriptive Statistics (P63 Full five minutes spreadsheet) Include condition: MS=0							
	Level of Factor	Level of Factor	N	Mean velocity (cm/s) Mean	Mean velocity (cm/s) Std.Dev.	Mean velocity (cm/s) Std.Err	Mean velocity (cm/s) -95.00%	Mean velocity (cm/s) +95.00%
Total			32	3.34675	0.96135	0.16994	3.00014	3.69335
Running	0		15	3.62552	0.99692	0.25740	3.07344	4.17760
Running	1		17	3.10077	0.88537	0.21473	2.64555	3.55599
Lesion	0		17	3.28603	1.05975	0.25702	2.74116	3.83091
Lesion	1		15	3.41556	0.86798	0.22411	2.93488	3.89623
Running*Lesio	0	0	8	3.68281	1.10234	0.38973	2.76122	4.60440
Running*Lesio	0	1	7	3.56005	0.94442	0.35695	2.68661	4.43350
Running*Lesio	1	0	9	2.93334	0.94101	0.31367	2.21002	3.65667
Running*Lesio	1	1	8	3.28912	0.83853	0.29646	2.58809	3.99016

A5.1.5.4.2.2. EPM P63 Non-MS only Distance travelled ANOVA

Effect	Univariate Tests of Significance for Total distance (cm) (P63 Full five minutes Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	2197916	1	2197916	389.490	0.00000
Running	12621	1	12621	2.2367	0.14595
Lesion	6582	1	6582	0.1166	0.73525
Running*Lesion	2775	1	2775	0.4919	0.48886
Error	158005	28	5643		

A5.1.5.4.2.3. EPM P63 Non-MS only Duration in open Arms ANOVA

Effect	Univariate Tests of Significance for Duration in open arms (s) (P63 Full five m Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	6342.0	1	6342.01	14.0294	0.00082
Running	213.8	1	213.87	0.4731	0.49721
Lesion	277.52	1	277.52	0.6139	0.43989
Running*Lesion	340.01	1	340.01	0.7521	0.39316
Error	12657.4	28	452.05		

A5.1.5.4.2.4. EPM P63 Non-MS only Frequency of entry into open arms ANOVA

	Univariate Tests of Significance for Frequency of entry into open arms (P63 Fu Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	288.574	1	288.574	40.4798	0.00000
Running	7.749	1	7.749	1.0870	0.30605
Lesion	2.079	1	2.079	0.2917	0.59336
Running*Lesion	0.385	1	0.385	0.0540	0.81792
Error	199.607	28	7.128		

A5.1.5.4.2.5. EPM P63 Non-MS only Duration in central square ANOVA

	Univariate Tests of Significance for Duration in central square (s) (P63 Full five Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	68655.9	1	68655.9	36.5918	0.00000
Running	224.51	1	224.51	0.1196	0.73199
Lesion	2132.1	1	2132.1	1.1363	0.29553
Running*Lesion	702.91	1	702.91	0.3746	0.54542
Error	52535.4	28	1876.2		

A5.1.5.4.2.6. EPM P63 Non-MS only Maximum velocity ANOVA

	Univariate Tests of Significance for Maximum velocity (cm/s) (P63 Full five mi Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	50806.4	1	50806.4	714.949	0.00000
Running	70.36	1	70.36	0.9901	0.32823
Lesion	71.87	1	71.87	1.0114	0.32318
Running*Lesion	1.29	1	1.29	0.0182	0.89373
Error	1989.7	28	71.06		

A5.1.5.4.2.7. EPM P63 Non-MS only Mean Velocity ANOVA

Effect	Univariate Tests of Significance for Mean velocity (cm/s) (P63 Full five minute Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	359.775	1	359.775	389.490	0.00000
Running	2.066	1	2.066	2.236	0.14595
Lesion	0.107	1	0.107	0.116	0.73525
Running*Lesion	0.454	1	0.454	0.491	0.48886
Error	25.863	28	0.923		

A5.1.5.4.3.1. EPM P49 and P63 Non-MS only Distance travelled Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (EPM Repeated measures spre Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	7346610	1	7346610	1011.45	0.00000
Running	63746	1	63746	8.776	0.00629
Lesion	126	1	126	0.017	0.89607
Running*Lesion	153	1	153	0.002	0.96377
Error	196111	27	7263		
TIME	430894	1	430894	78.764	0.00000
TIME*Running	10556	1	10556	1.930	0.17615
TIME*Lesion	949	1	949	0.174	0.68019
TIME*Running*Lesion	3958	1	3958	0.724	0.40245
Error	147708	27	5470		

A5.1.5.4.3.2. EPM P49 and P63 Non-MS only Distance travelled Repeated measures post hoc Newman Keuls test (TIME effect)

Cell No.	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 54707., df = 27.000 Include condition: MS=0 TIME	{1} 1346.8	{2} 822.19
1	P49 Total distance (cm		0.00014
2	P63 Total distance (cm	0.00014	

A5.1.5.4.3.3. EPM P49 and P63 Non-MS only Duration in open Arms Repeated measures ANOVA

	Repeated Measures Analysis of Variance (EPM Repeated measures spre Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	31939.1	1	31939.1	65.4426	0.00000
Running	181.17	1	181.17	0.3712	0.54743
Lesion	66.75	1	66.75	0.1367	0.71438
Running*Lesion	11.48	1	11.48	0.0235	0.87925
Error	13177.2	27	488.05		
TIME	7015.0	1	7015.0	21.0879	0.00009
TIME*Running	78.41	1	78.41	0.2357	0.63123
TIME*Lesion	243.46	1	243.46	0.7318	0.39981
TIME*Running*Lesion	42.50	1	42.50	0.1277	0.72354
Error	8981.7	27	332.66		

A5.1.5.4.3.4. EPM P49 and P63 Non-MS only Duration in open Arms Repeated measures post hoc Newman Keuls test (Time effect)

	Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh Approximate Probabilities for Post Hoc Tests Error: Within MS = 332.66, df = 27.000 Include condition: MS=0		
Cell No.	TIME	{1} 33.156	{2} 12.059
1	P49 Duration in open arms (s)		0.00023
2	P63 Duration in open arms (s	0.00023	

A5.1.5.4.3.5. EPM P49 and P63 Non-MS only Frequency of entry into open arms Repeated measures ANOVA

	Repeated Measures Analysis of Variance (EPM Repeated measures spre Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1368.90	1	1368.90	101.450	0.00000
Running	2.549	1	2.549	0.1889	0.66729
Lesion	0.300	1	0.300	0.0222	0.88258
Running*Lesion	2.855	1	2.855	0.2116	0.64920
Error	364.32	27	13.493		
TIME	219.71	1	219.71	36.748	0.00000
TIME*Running	0.704	1	0.704	0.1177	0.73415
TIME*Lesion	1.251	1	1.251	0.2093	0.65096
TIME*Running*Lesion	1.251	1	1.251	0.2093	0.65096
Error	161.42	27	5.979		

A5.1.5.4.3.6. EPM P49 and P63 Non-MS only Frequency of entry into open arms Repeated measures post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 5.9788, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 6.6129	{2} 2.8065
1	P49 Frequency of entry into open arms		0.00014
2	P63 Frequency of entry into open arm	0.00014	

A5.1.5.4.3.7. EPM P49 and P63 Non-MS only Central square duration repeated measures ANOVA

Repeated Measures Analysis of Variance (EPM Repeated measures spre
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	100291.	1	100291.	72.9211	0.00000
Running	4.8	1	4.8	0.0034	0.95356
Lesion	648.9	1	648.9	0.4717	0.49802
Running*Lesion	348.1	1	348.1	0.2531	0.61897
Error	37134.	27	1375.		
TIME	1525.	1	1525.	1.6463	0.21036
TIME*Running	212.7	1	212.7	0.2296	0.63566
TIME*Lesion	917.0	1	917.0	0.9898	0.32860
TIME*Running*Lesion	95.5	1	95.5	0.1030	0.75067
Error	25011.	27	926.4		

A5.1.5.4.3.8. EPM P49 and P63 Non-MS only Maximum velocity Repeated measures ANOVA

Repeated Measures Analysis of Variance (EPM Repeated measures spre
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	499949.	1	499949.	19.2607	0.00015
Running	265.9	1	265.9	0.0102	0.92013
Lesion	3623.8	1	3623.8	0.1396	0.71158
Running*Lesion	27183.	1	27183.	1.0472	0.31522
Error	700836.	27	25956.		
TIME	154030.	1	154030.	5.8875	0.02220
TIME*Running	858.6	1	858.6	0.0328	0.85759
TIME*Lesion	2475.4	1	2475.4	0.0946	0.76074
TIME*Running*Lesion	26230.0	1	26230.0	1.0025	0.32557
Error	706379.	27	26162.		

A5.1.5.4.3.8. EPM P49 and P63 Non-MS only Maximum velocity Repeated measures post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 26162., df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 139.17	{2} 39.959
1	P49 Maximum velocity (cm/		0.022913
2	P63 Maximum velocity (cm/	0.022913	

A5.1.5.4.3.9. EPM P49 and P63 Non-MS only Mean Velocity Repeated measures ANOVA

Repeated Measures Analysis of Variance (EPM Repeated measures spre
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1211.18	1	1211.18	1015.49	0.00000
Running	10.537	1	10.537	8.834	0.00614
Lesion	0.018	1	0.018	0.015	0.90264
Running*Lesion	0.010	1	0.010	0.009	0.92675
Error	32.203	27	1.193		
TIME	72.634	1	72.634	76.795	0.00000
TIME*Running	1.770	1	1.770	1.871	0.18263
TIME*Lesion	0.163	1	0.163	0.172	0.68168
TIME*Running*Lesion	0.568	1	0.568	0.600	0.44513
Error	25.537	27	0.946		

A5.1.5.4.3.10. EPM P49 and P63 Non-MS only Mean Velocity Repeated measures post hoc Newman Keuls test (TIME effect)

Newman-Keuls test; variable DV_1 (EPM Repeated measures spreadsh
Approximate Probabilities for Post Hoc Tests
Error: Within MS = .94582, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 5.4798	{2} 3.3265
1	P49 Mean velocity (cm/		0.000144
2	P63 Mean velocity (cm/	0.000144	

APPENDIX A5.1.6 CYLINDER TEST

A5.1.6.1.1. Cylinder Test: P49 Data Spreadsheet

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Rearing Left	5 Rearing Right	6 Rearing Both	7 Rearing Unsure	8 Stepping Left
122	**1**	**1**	**0**	9	13	21	3	2
135	**1**	**0**	**1**	25	4	25	2	9
197	**1**	**0**	**0**	26	20	34	3	1
195	**1**	**1**	**1**	5	6	10	1	0
154	**1**	**0**	**1**	20	11	29	0	1
227	**0**	**0**	**1**	27	2	25	5	4
164	**1**	**1**	**0**	11	2	18	4	1
129	**1**	**1**	**1**	14	3	15	0	1
174	**0**	**1**	**0**	14	10	26	5	2
148	**1**	**0**	**0**	22	12	34	6	3
141	**1**	**0**	**1**	18	11	21	2	5
207	**0**	**1**	**1**	11	17	21	0	2
176	**0**	**0**	**0**	13	12	26	6	3
203	**0**	**1**	**1**	16	0	11	1	3
193	**0**	**0**	**1**	35	2	33	3	8
167	**0**	**0**	**0**	6	7	31	4	2
222	**0**	**1**	**0**	12	13	23	1	1
182	**1**	**1**	**1**	15	3	17	1	1
144	**1**	**0**	**0**	6	13	24	2	0
209	**1**	**0**	**1**	31	2	22	3	6
216	**1**	**1**	**0**	8	7	21	3	0
188	**0**	**1**	**1**	13	2	12	3	1
169	**0**	**0**	**0**	10	11	22	0	1
234	**0**	**0**	**1**	29	7	29	1	7
117	**0**	**0**	**1**	5	10	17	2	1
126	**0**	**0**	**1**	12	13	29	3	2
131	**0**	**1**	**0**	14	5	22	1	2
191	**0**	**1**	**1**	18	2	18	3	2
160	**0**	**0**	**0**	15	15	37	3	1
186	**1**	**0**	**0**	12	7	24	3	3
220	**1**	**1**	**1**	7	11	19	1	0
190	**1**	**0**	**0**	20	16	33	0	2
143	**1**	**0**	**1**	21	3	22	1	6
196	**1**	**1**	**0**	13	12	20	0	1
145	**1**	**1**	**1**	15	0	6	0	5
198	**1**	**1**	**1**	22	2	13	0	13
139	**1**	**0**	**0**	24	16	25	0	7
210	**0**	**1**	**1**	15	3	19	2	1
232	**0**	**1**	**0**	10	7	15	1	2
171	**0**	**0**	**0**	13	5	16	1	2
219	**0**	**0**	**0**	13	13	21	0	4
205	**0**	**0**	**1**	30	4	25	0	9
137	**0**	**1**	**1**	21	0	14	0	11
250	**1**	**0**	**0**	8	11	23	1	4

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Stepping Right	5 Stepping Both	6 Stepping Unsure	7 Combine Left	8 Combine d Right
122	**1**	**1**	**0**	3	10	2	11	16
135	**1**	**0**	**1**	0	13	1	34	4
197	**1**	**0**	**0**	2	21	0	27	22
195	**1**	**1**	**1**	0	5	0	5	6
154	**1**	**0**	**1**	1	11	0	21	12
227	**0**	**0**	**1**	1	10	0	31	3
164	**1**	**1**	**0**	0	19	0	12	2
129	**1**	**1**	**1**	0	8	0	15	3
174	**0**	**1**	**0**	1	23	1	16	11
148	**1**	**0**	**0**	1	21	0	25	13
141	**1**	**0**	**1**	1	15	0	23	12
207	**0**	**1**	**1**	1	16	0	13	18
176	**0**	**0**	**0**	3	21	1	16	15
203	**0**	**1**	**1**	0	8	1	19	0
193	**0**	**0**	**1**	0	17	0	43	2
167	**0**	**0**	**0**	1	24	0	8	8
222	**0**	**1**	**0**	4	12	0	13	17
182	**1**	**1**	**1**	0	18	0	16	3
144	**1**	**0**	**0**	0	16	0	6	13
209	**1**	**0**	**1**	1	6	1	37	3
216	**1**	**1**	**0**	1	14	0	8	8
188	**0**	**1**	**1**	0	8	0	14	2
169	**0**	**0**	**0**	1	15	0	11	12
234	**0**	**0**	**1**	1	17	0	36	8
117	**0**	**0**	**1**	0	12	0	6	10
126	**0**	**0**	**1**	3	16	0	14	16
131	**0**	**1**	**0**	0	16	1	16	5
191	**0**	**1**	**1**	2	12	0	20	4
160	**0**	**0**	**0**	2	27	0	16	17
186	**1**	**0**	**0**	1	12	0	15	8
220	**1**	**1**	**1**	0	16	0	7	11
190	**1**	**0**	**0**	1	23	0	22	17
143	**1**	**0**	**1**	0	14	0	27	3
196	**1**	**1**	**0**	2	16	0	14	14
145	**1**	**1**	**1**	0	0	0	20	0
198	**1**	**1**	**1**	0	9	0	35	2
139	**1**	**0**	**0**	1	13	0	31	17
210	**0**	**1**	**1**	2	13	0	16	5
232	**0**	**1**	**0**	1	13	0	12	8
171	**0**	**0**	**0**	2	13	0	15	7
219	**0**	**0**	**0**	2	14	0	17	15
205	**0**	**0**	**1**	1	16	0	39	5
137	**0**	**1**	**1**	0	11	0	32	0
250	**1**	**0**	**0**	1	13	0	12	12

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Combined Both	5 Total movements	6 Half both	7 % Left Limb use	8 Time grooming
122	**1**	**1**	**0**	31	58	15.5	**45.7**	239
135	**1**	**0**	**1**	38	76	19	**69.7**	156
197	**1**	**0**	**0**	55	104	27.5	**52.4**	92
195	**1**	**1**	**1**	15	26	7.5	**48.1**	104
154	**1**	**0**	**1**	40	73	20	**56.2**	83
227	**0**	**0**	**1**	35	69	17.5	**70.3**	122
164	**1**	**1**	**0**	37	51	18.5	**59.8**	289
129	**1**	**1**	**1**	23	41	11.5	**64.6**	169
174	**0**	**1**	**0**	49	76	24.5	**53.3**	127
148	**1**	**0**	**0**	55	93	27.5	**56.5**	56
141	**1**	**0**	**1**	36	71	18	**57.7**	88
207	**0**	**1**	**1**	37	68	18.5	**46.3**	172
176	**0**	**0**	**0**	47	78	23.5	**50.6**	67
203	**0**	**1**	**1**	19	38	9.5	**75.0**	244
193	**0**	**0**	**1**	50	95	25	**71.6**	144
167	**0**	**0**	**0**	55	71	27.5	**50.0**	222
222	**0**	**1**	**0**	35	65	17.5	**46.9**	228
182	**1**	**1**	**1**	35	54	17.5	**62.0**	200
144	**1**	**0**	**0**	40	59	20	**44.1**	179
209	**1**	**0**	**1**	28	68	14	**75.0**	111
216	**1**	**1**	**0**	35	51	17.5	**50.0**	48
188	**0**	**1**	**1**	20	36	10	**66.7**	72
169	**0**	**0**	**0**	37	60	18.5	**49.2**	243
234	**0**	**0**	**1**	46	90	23	**65.6**	35
117	**0**	**0**	**1**	29	45	14.5	**45.6**	71
126	**0**	**0**	**1**	45	75	22.5	**48.7**	185
131	**0**	**1**	**0**	38	59	19	**59.3**	260
191	**0**	**1**	**1**	30	54	15	**64.8**	158
160	**0**	**0**	**0**	64	97	32	**49.5**	101
186	**1**	**0**	**0**	36	59	18	**55.9**	209
220	**1**	**1**	**1**	35	53	17.5	**46.2**	128
190	**1**	**0**	**0**	56	95	28	**52.6**	127
143	**1**	**0**	**1**	36	66	18	**68.2**	90
196	**1**	**1**	**0**	36	64	18	**50.0**	135
145	**1**	**1**	**1**	6	26	3	**88.5**	181
198	**1**	**1**	**1**	22	59	11	**78.0**	111
139	**1**	**0**	**0**	38	86	19	**58.1**	90
210	**0**	**1**	**1**	32	53	16	**60.4**	245
232	**0**	**1**	**0**	28	48	14	**54.2**	133
171	**0**	**0**	**0**	29	51	14.5	**57.8**	117
219	**0**	**0**	**0**	35	67	17.5	**51.5**	203
205	**0**	**0**	**1**	41	85	20.5	**70.0**	82
137	**0**	**1**	**1**	25	57	12.5	**78.1**	146
250	**1**	**0**	**0**	36	60	18	**50.0**	83

	P49 (2)						
	1 MS	2 Running	3 Lesion	4 % Grooming	5 Total rearing	6 Total stepping	7 Total movements
122	**1**	**1**	**0**	**47.8**	46	17	63
135	**1**	**0**	**1**	**31.2**	56	23	79
197	**1**	**0**	**0**	**18.4**	83	24	107
195	**1**	**1**	**1**	**20.8**	22	5	27
154	**1**	**0**	**1**	**16.6**	60	13	73
227	**0**	**0**	**1**	**24.4**	59	15	74
164	**1**	**1**	**0**	**57.8**	35	20	55
129	**1**	**1**	**1**	**33.8**	32	9	41
174	**0**	**1**	**0**	**25.4**	55	27	82
148	**1**	**0**	**0**	**11.2**	74	25	99
141	**1**	**0**	**1**	**17.6**	52	21	73
207	**0**	**1**	**1**	**34.4**	49	19	68
176	**0**	**0**	**0**	**13.4**	57	28	85
203	**0**	**1**	**1**	**48.8**	28	12	40
193	**0**	**0**	**1**	**28.8**	73	25	98
167	**0**	**0**	**0**	**44.4**	48	27	75
222	**0**	**1**	**0**	**45.6**	49	17	66
182	**1**	**1**	**1**	**40.0**	36	19	55
144	**1**	**0**	**0**	**35.8**	45	16	61
209	**1**	**0**	**1**	**22.2**	58	14	72
216	**1**	**1**	**0**	**9.6**	39	15	54
188	**0**	**1**	**1**	**14.4**	30	9	39
169	**0**	**0**	**0**	**48.6**	43	17	60
234	**0**	**0**	**1**	**7.0**	66	25	91
117	**0**	**0**	**1**	**14.2**	34	13	47
126	**0**	**0**	**1**	**37.0**	57	21	78
131	**0**	**1**	**0**	**52.0**	42	19	61
191	**0**	**1**	**1**	**31.6**	41	16	57
160	**0**	**0**	**0**	**20.2**	70	30	100
186	**1**	**0**	**0**	**41.8**	46	16	62
220	**1**	**1**	**1**	**25.6**	38	16	54
190	**1**	**0**	**0**	**26.2**	69	26	95
143	**1**	**0**	**1**	**18.6**	47	20	67
196	**1**	**1**	**0**	**27.9**	45	19	64
145	**1**	**1**	**1**	**37.4**	21	5	26
198	**1**	**1**	**1**	**22.9**	37	22	59
139	**1**	**0**	**0**	**18.6**	65	21	86
210	**0**	**1**	**1**	**50.6**	39	16	55
232	**0**	**1**	**0**	**27.5**	33	16	49
171	**0**	**0**	**0**	**24.2**	35	17	52
219	**0**	**0**	**0**	**41.9**	47	20	67
205	**0**	**0**	**1**	**16.9**	59	26	85
137	**0**	**1**	**1**	**30.2**	35	22	57
250	**1**	**0**	**0**	**16.6**	43	18	61

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Rearing Left	5 Rearing Right	6 Rearing Both	7 Rearing Unsure	8 Stepping Left
271	**1**	**1**	**0**	9	9	26	1	3
301	**0**	**1**	**1**	17	0	4	0	5
305	**0**	**1**	**0**	3	10	15	0	2
309	**1**	**0**	**1**	18	2	25	4	5
306	**1**	**1**	**1**	5	2	12	0	0
312	**0**	**1**	**1**	17	1	11	1	2
313	**0**	**1**	**0**	5	1	6	1	1
315	**0**	**0**	**0**	4	6	17	2	0
314	**0**	**1**	**0**	10	6	21	2	0
317	**1**	**1**	**1**	13	2	2	0	0
319	**1**	**1**	**0**	15	12	16	0	2
318	**1**	**1**	**0**	9	4	18	1	1
320	**1**	**1**	**1**	19	4	15	1	15
322	**0**	**0**	**1**	17	2	2	2	2
323	**0**	**1**	**0**	8	16	29	1	2
324	**0**	**1**	**0**	10	8	24	0	0

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Stepping Right	5 Stepping Both	6 Stepping Unsure	7 Combine Left	8 Combine d Right
271	**1**	**1**	**0**	3	15	0	12	12
301	**0**	**1**	**1**	0	0	0	22	0
305	**0**	**1**	**0**	1	4	0	5	11
309	**1**	**0**	**1**	0	14	0	23	2
306	**1**	**1**	**1**	0	8	0	5	2
312	**0**	**1**	**1**	0	3	0	19	1
313	**0**	**1**	**0**	0	2	0	6	1
315	**0**	**0**	**0**	1	14	0	4	7
314	**0**	**1**	**0**	0	19	0	10	6
317	**1**	**1**	**1**	0	0	0	13	2
319	**1**	**1**	**0**	2	10	0	17	14
318	**1**	**1**	**0**	1	12	0	10	5
320	**1**	**1**	**1**	0	7	0	34	4
322	**0**	**0**	**1**	0	1	0	19	2
323	**0**	**1**	**0**	4	23	0	10	20
324	**0**	**1**	**0**	0	14	0	10	8

	P49 (2)							
	1 MS	2 Running	3 Lesion	4 Combined Both	5 Total movements	6 Half both	7 % Left Limb use	8 Time grooming
271	**1**	**1**	**0**	41	65	20.5	**50.0**	2
301	**0**	**1**	**1**	4	26	2	**92.3**	64
305	**0**	**1**	**0**	19	35	9.5	**41.4**	153
309	**1**	**0**	**1**	39	64	19.5	**66.4**	180
306	**1**	**1**	**1**	20	27	10	**55.6**	0
312	**0**	**1**	**1**	14	34	7	**76.5**	105
313	**0**	**1**	**0**	8	15	4	**66.7**	174
315	**0**	**0**	**0**	31	42	15.5	**46.4**	118
314	**0**	**1**	**0**	40	56	20	**53.6**	254
317	**1**	**1**	**1**	2	17	1	**82.4**	121
319	**1**	**1**	**0**	26	57	13	**52.6**	172
318	**1**	**1**	**0**	30	45	15	**55.6**	97
320	**1**	**1**	**1**	22	60	11	**75.0**	133
322	**0**	**0**	**1**	3	24	1.5	**85.4**	154
323	**0**	**1**	**0**	52	82	26	**43.9**	113
324	**0**	**1**	**0**	38	56	19	**51.8**	104

	P49 (2)						
	1 MS	2 Running	3 Lesion	4 % Grooming	5 Total rearing	6 Total stepping	7 Total movements
271	**1**	**1**	**0**	**0.4**	45	21	66
301	**0**	**1**	**1**	**12.8**	21	5	26
305	**0**	**1**	**0**	**30.6**	28	7	35
309	**1**	**0**	**1**	**36.0**	49	19	68
306	**1**	**1**	**1**	**0.0**	19	8	27
312	**0**	**1**	**1**	**21.0**	30	5	35
313	**0**	**1**	**0**	**34.8**	13	3	16
315	**0**	**0**	**0**	**23.6**	29	15	44
314	**0**	**1**	**0**	**50.8**	39	19	58
317	**1**	**1**	**1**	**24.2**	17	0	17
319	**1**	**1**	**0**	**34.4**	43	14	57
318	**1**	**1**	**0**	**19.4**	32	14	46
320	**1**	**1**	**1**	**26.6**	39	22	61
322	**0**	**0**	**1**	**30.8**	23	3	26
323	**0**	**1**	**0**	**22.6**	54	29	83
324	**0**	**1**	**0**	**20.8**	42	14	56

A5.1.6.1.2. Cylinder Test P49 Percentage Left limb use Descriptive Statistics

	Descriptive Statistics (Cylinder test P49)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	% Left Limb use Mean	% Left Limb use Std.Dev.	% Left Limb use Std.Err	% Left Limb use -95.00%	% Left Limb use +95.00%
Total				60	59.5010	12.2851	1.58600	56.3274	62.6745
MS	0			31	59.4582	13.1031	2.35339	54.6520	64.2645
MS	1			29	59.5466	11.5784	2.15005	55.1424	63.9508
Running	0			27	58.3326	10.5640	2.03305	54.1536	62.5116
Running	1			33	60.4569	13.6197	2.37089	55.6275	65.2862
Lesion	0			30	51.9806	5.3580	0.97823	49.9799	53.9813
Lesion	1			30	67.0213	12.7017	2.31900	62.2784	71.7642
MS*Running	0	0		14	58.0085	12.3261	3.29429	50.8916	65.1254
MS*Running	0	1		17	60.6521	13.9686	3.38790	53.4701	67.8342
MS*Running	1	0		13	58.6817	8.7721	2.43296	53.3807	63.9827
MS*Running	1	1		16	60.2494	13.6933	3.42333	52.9527	67.5461
MS*Lesion	0	0		16	51.6320	6.1328	1.53320	48.3640	54.8999
MS*Lesion	0	1		15	67.8062	13.5257	3.49234	60.3159	75.2966
MS*Lesion	1	0		14	52.3790	4.5081	1.20485	49.7761	54.9820
MS*Lesion	1	1		15	66.2364	12.2443	3.16146	59.4557	73.0171
Running*Lesion	0	0		14	51.7630	4.1631	1.11264	49.3593	54.1668
Running*Lesion	0	1		13	65.4076	10.8832	3.01846	58.8309	71.9842
Running*Lesion	1	0		16	52.1710	6.3560	1.58901	48.7841	55.5579
Running*Lesion	1	1		17	68.2553	14.1368	3.42867	60.9869	75.5238
MS*Running*Les	0	0	0	7	50.7223	3.5170	1.32930	47.4696	53.9750
MS*Running*Les	0	0	1	7	65.2947	13.8904	5.25010	52.4482	78.1412
MS*Running*Les	0	1	0	9	52.3395	7.7432	2.58107	46.3876	58.2915
MS*Running*Les	0	1	1	8	70.0038	13.7362	4.85650	58.5200	81.4876
MS*Running*Les	1	0	0	7	52.8038	4.7597	1.79902	48.4017	57.2058
MS*Running*Les	1	0	1	6	65.5393	7.2591	2.96353	57.9212	73.1573
MS*Running*Les	1	1	0	7	51.9543	4.5779	1.73031	47.7204	56.1883
MS*Running*Les	1	1	1	9	66.7011	15.1269	5.04230	55.0736	78.3287

A5.1.6.1.3. Cylinder Test P49 Percentage Left limb use ANOVA

	Univariate Tests of Significance for % Left Limb use (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	208203.0	1	208203.0	2009.35	0.00000
MS	1.7	1	1.7	0.016	0.898311
Running	40.6	1	40.6	0.392	0.534034
Lesion	3286.0	1	3286.0	31.713	0.000001
MS*Running	33.3	1	33.3	0.322	0.573088
MS*Lesion	20.8	1	20.8	0.201	0.655775
Running*Lesion	24.0	1	24.0	0.232	0.632376
MS*Running*Lesion	1.1	1	1.1	0.010	0.919229
Error	5388.1	52	103.6		

A5.1.6.1.4. Cylinder Test P49 Percentage Left Limb use Post hoc Newman Keuls Test (Lesion effect)

Newman-Keuls test; variable % Left Limb use (Cylinder test I
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 103.62, df = 52.000

Cell No.	Lesion	{1} 51.981	{2} 67.021
1	0		0.00011
2	1	0.00011	

A5.1.6.1.5. Cylinder Test P49 Percentage Left limb use post hoc Newman Keuls test (MS*Running*Lesion)

Newman-Keuls test; variable % Left Limb use (Cylinder test P
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 103.62, df = 52.000

Cell No.	MS	Running	Lesion	{1} 50.722	{2} 65.295	{3} 52.340	{4} 70.004
1	0	0	0		0.06040	0.95015	0.01375
2	0	0	1	0.06040		0.04662	0.81107
3	0	1	0	0.95015	0.04662		0.01892
4	0	1	1	0.01375	0.81107	0.01892	
5	1	0	0	0.97932	0.02239	0.93066	0.01697
6	1	0	1	0.07446	0.96350	0.07352	0.67891
7	1	1	0	0.81728	0.06921	0.94245	0.02063
8	1	1	1	0.05713	0.96207	0.06635	0.53621

Newman-Keuls test; variable % Left Limb use (Cylinder test P
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 103.62, df = 52.000

Cell No.	MS	Running	Lesion	{5} 52.804	{6} 65.539	{7} 51.954	{8} 66.701
1	0	0	0	0.97932	0.07446	0.81728	0.05713
2	0	0	1	0.02239	0.96350	0.06921	0.96207
3	0	1	0	0.93066	0.07352	0.94245	0.06635
4	0	1	1	0.01697	0.67891	0.02063	0.53621
5	1	0	0		0.05135	0.98603	0.05420
6	1	0	1	0.05135		0.09279	0.82752
7	1	1	0	0.98603	0.09279		0.07680
8	1	1	1	0.05420	0.82752	0.07680	

A5.1.6.1.6. Cylinder Test P49 Percentage Grooming Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P49)								
	Level c Factor	Level of Factor	Level of Factor	N	% Grooming Mean	% Grooming Std.Dev.	% Grooming Std.Err	% Grooming -95.00%	% Grooming +95.00%
Total				60	27.8129	13.0129	1.67996	24.4513	31.1745
MS	0			31	29.9781	12.8388	2.30592	25.2688	34.6874
MS	1			29	25.4983	13.0179	2.41737	20.5466	30.4501
Running	0			27	25.4180	11.0131	2.11947	21.0614	29.7747
Running	1			33	29.7723	14.3132	2.49161	24.6970	34.8476
Lesion	0			30	29.7440	14.3762	2.62472	24.3759	35.1122
Lesion	1			30	25.8817	11.4070	2.08263	21.6223	30.1412
MS*Running	0	0		14	26.8184	12.5032	3.34164	19.5992	34.0376
MS*Running	0	1		17	32.5802	12.8887	3.12596	25.9535	39.2070
MS*Running	1	0		13	23.9099	9.4170	2.61183	18.2192	29.6006
MS*Running	1	1		16	26.7889	15.5380	3.88451	18.5093	35.0685
MS*Lesion	0	0		16	32.8996	12.5385	3.13463	26.2183	39.5810
MS*Lesion	0	1		15	26.8618	12.8302	3.31276	19.7566	33.9670
MS*Lesion	1	0		14	26.1376	15.9179	4.25425	16.9468	35.3284
MS*Lesion	1	1		15	24.9017	10.1420	2.61867	19.2852	30.5182
Running*Lesion	0	0		14	27.4964	12.5248	3.34741	20.2648	34.7281
Running*Lesion	0	1		13	23.1797	9.0763	2.51732	17.6950	28.6645
Running*Lesion	1	0		16	31.7107	15.9617	3.99043	23.2053	40.2161
Running*Lesion	1	1		17	27.9479	12.7902	3.10210	21.3718	34.5241
MS*Running*Lesic	0	0	0	7	30.9022	13.7643	5.20243	18.1723	43.6321
MS*Running*Lesic	0	0	1	7	22.7345	10.5046	3.97038	13.0194	32.4497
MS*Running*Lesic	0	1	0	9	34.4532	12.1028	4.03428	25.1501	43.7563
MS*Running*Lesic	0	1	1	8	30.4731	14.2376	5.03376	18.5701	42.3761
MS*Running*Lesic	1	0	0	7	24.0906	11.1071	4.19810	13.8182	34.3630
MS*Running*Lesic	1	0	1	6	23.6991	8.0432	3.28364	15.2582	32.1400
MS*Running*Lesic	1	1	0	7	28.1846	20.3923	7.70759	9.3248	47.0444
MS*Running*Lesic	1	1	1	9	25.7034	11.7374	3.91246	16.6812	34.7255

A5.1.6.1.7. Cylinder Test P49 Percentage Grooming ANOVA

Effect	Univariate Tests of Significance for % Grooming (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	44693.06	1	44693.06	256.7845	0.000000
MS	262.70	1	262.70	1.5094	0.224769
Running	278.57	1	278.57	1.6005	0.211470
Lesion	207.88	1	207.88	1.1944	0.279485
MS*Running	24.83	1	24.83	0.1427	0.707178
MS*Lesion	79.26	1	79.26	0.4554	0.502767
Running*Lesion	4.05	1	4.05	0.0233	0.879279
MS*Running*Lesion	36.31	1	36.31	0.2086	0.649769
Error	9050.54	52	174.05		

A5.1.6.1.8. Cylinder Test P49 Total Rearing Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P49)								
	Level c Factor	Level of Factor	Level of Factor	N	Total rearing Mean	Total rearing Std.Dev.	Total rearing Std.Err	Total rearing -95.00%	Total rearing +95.00%
Total				60	43.6833	15.2487	1.96860	39.7441	47.6225
MS	0			31	42.8387	14.7808	2.65471	37.4170	48.2603
MS	1			29	44.5862	15.9452	2.96096	38.5209	50.6514
Running	0			27	53.5925	14.3641	2.76437	47.9103	59.2748
Running	1			33	35.5757	10.5090	1.82938	31.8494	39.3020
Lesion	0			30	46.4666	14.8108	2.70407	40.9362	51.9971
Lesion	1			30	40.9000	15.4168	2.81471	35.1432	46.6567
MS*Running	0	0		14	50.0000	15.5859	4.16553	41.0009	58.9990
MS*Running	0	1		17	36.9411	11.4207	2.76994	31.0691	42.8131
MS*Running	1	0		13	57.4615	12.3532	3.42617	49.9965	64.9265
MS*Running	1	1		16	34.1250	9.5977	2.39943	29.0107	39.2392
MS*Lesion	0	0		16	42.7500	13.5867	3.39669	35.5101	49.9898
MS*Lesion	0	1		15	42.9333	16.4424	4.24540	33.8278	52.0388
MS*Lesion	1	0		14	50.7142	15.4891	4.13963	41.7711	59.6574
MS*Lesion	1	1		15	38.8666	14.5987	3.76938	30.7821	46.9511
Running*Lesion	0	0		14	53.8571	15.9559	4.26441	44.6444	63.0698
Running*Lesion	0	1		13	53.3076	13.0791	3.62750	45.4040	61.2113
Running*Lesion	1	0		16	40.0000	10.3858	2.59647	34.4657	45.5342
Running*Lesion	1	1		17	31.4117	9.0419	2.19300	26.7628	36.0607
MS*Running*Lesic	0	0	0	7	47.0000	13.6259	5.15012	34.3980	59.6019
MS*Running*Lesic	0	0	1	7	53.0000	17.8792	6.75771	36.4644	69.5355
MS*Running*Lesic	0	1	0	9	39.4444	13.3707	4.45692	29.1667	49.7221
MS*Running*Lesic	0	1	1	8	34.1250	8.7576	3.09629	26.8034	41.4465
MS*Running*Lesic	1	0	0	7	60.7142	16.0074	6.05024	45.9098	75.5187
MS*Running*Lesic	1	0	1	6	53.6666	5.1639	2.10818	48.2474	59.0859
MS*Running*Lesic	1	1	0	7	40.7142	5.4989	2.07839	35.6286	45.7999
MS*Running*Lesic	1	1	1	9	29.0000	9.0829	3.02765	22.0182	35.9817

A5.1.6.1.9. Cylinder Test P49 Total Rearing ANOVA

Effect	Univariate Tests of Significance for Total rearing (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	117867.8	1	117867.8	815.9889	0.000000
MS	102.1	1	102.1	0.7067	0.404387
Running	4657.5	1	4657.5	32.2431	0.000001
Lesion	301.2	1	301.2	2.0854	0.154710
MS*Running	306.4	1	306.4	2.1213	0.151278
MS*Lesion	348.3	1	348.3	2.4112	0.126535
Running*Lesion	235.5	1	235.5	1.6301	0.207360
MS*Running*Lesion	40.8	1	40.8	0.2823	0.597449
Error	7511.3	52	144.4		

A5.1.6.1.10. Cylinder Test P49 Total Rearing post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total rearing (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 144.45, df = 52.000

Cell No.	Running	{1} 53.593	{2} 35.576
1	0		0.00011
2	1	0.00011	

A5.1.6.1.11. Cylinder Test P49 Total rearing post hoc Newman Keuls test (MS*Running*Lesion)

Newman-Keuls test; variable Total rearing (Cylinder test P49)
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 144.45, df = 52.000

Cell No.	MS	Running	Lesion	{1} 47.000	{2} 53.000	{3} 39.444	{4} 34.125
1	0	0	0		0.34243	0.45458	0.18114
2	0	0	1	0.34243		0.14671	0.03114
3	0	1	0	0.45458	0.14671		0.39954
4	0	1	1	0.18114	0.03114	0.39954	
5	1	0	0	0.13946	0.43989	0.01578	0.00175
6	1	0	1	0.53999	0.91570	0.17069	0.03311
7	1	1	0	0.32012	0.13190	0.84016	0.54762
8	1	1	1	0.04436	0.00448	0.22707	0.41687

Newman-Keuls test; variable Total rearing (Cylinder test P49)
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 144.45, df = 52.000

Cell No.	MS	Running	Lesion	{5} 60.714	{6} 53.667	{7} 40.714	{8} 29.000
1	0	0	0	0.13946	0.53999	0.32012	0.04436
2	0	0	1	0.43989	0.91570	0.13190	0.00448
3	0	1	0	0.01578	0.17069	0.84016	0.22707
4	0	1	1	0.00175	0.03311	0.54762	0.41687
5	1	0	0		0.26553	0.01940	0.00025
6	1	0	1	0.26553		0.17695	0.00440
7	1	1	0	0.01940	0.17695		0.25300
8	1	1	1	0.00025	0.00440	0.25300	

A5.1.6.1.12. Cylinder Test P49 Total Stepping Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P49)								
	Level of Factor	Level of Factor	Level of Factor	N	Total stepping Mean	Total stepping Std.Dev.	Total stepping Std.Err	Total stepping -95.00%	Total stepping +95.00%
Total				60	16.9833	7.06025	0.91147	15.1594	18.8071
MS	0			31	17.3225	7.76052	1.39383	14.4760	20.1691
MS	1			29	16.6206	6.34380	1.17801	14.2076	19.0337
Running	0			27	19.9259	5.93507	1.14220	17.5780	22.2737
Running	1			33	14.5757	7.07120	1.23093	12.0684	17.0831
Lesion	0			30	19.0333	6.16152	1.12493	16.7325	21.3340
Lesion	1			30	14.9333	7.39959	1.35097	12.1702	17.6963
MS*Running	0	0		14	20.1428	7.36788	1.96915	15.8887	24.3969
MS*Running	0	1		17	15.0000	7.49166	1.81699	11.1481	18.8518
MS*Running	1	0		13	19.6923	4.17102	1.15683	17.1717	22.2128
MS*Running	1	1		16	14.1250	6.81053	1.70263	10.4959	17.7540
MS*Lesion	0	0		16	19.0625	7.71551	1.92887	14.9511	23.1738
MS*Lesion	0	1		15	15.4666	7.62389	1.96848	11.2446	19.6886
MS*Lesion	1	0		14	19.0000	4.00000	1.06904	16.6904	21.3095
MS*Lesion	1	1		15	14.4000	7.39497	1.90937	10.3048	18.4952
Running*Lesion	0	0		14	21.4285	5.12481	1.36966	18.4695	24.3875
Running*Lesion	0	1		13	18.3076	6.51133	1.80591	14.3729	22.2424
Running*Lesion	1	0		16	16.9375	6.37148	1.59287	13.5423	20.3326
Running*Lesion	1	1		17	12.3529	7.14966	1.73404	8.6769	16.0289
MS*Running*Lesic	0	0	0	7	22.0000	6.16441	2.32992	16.2988	27.7011
MS*Running*Lesic	0	0	1	7	18.2857	8.45999	3.19757	10.4615	26.1099
MS*Running*Lesic	0	1	0	9	16.7777	8.34832	2.78277	10.3606	23.1948
MS*Running*Lesic	0	1	1	8	13.0000	6.32455	2.23606	7.7125	18.2874
MS*Running*Lesic	1	0	0	7	20.8571	4.25944	1.60991	16.9178	24.7964
MS*Running*Lesic	1	0	1	6	18.3333	3.98329	1.62617	14.1531	22.5135
MS*Running*Lesic	1	1	0	7	17.1428	2.91139	1.10040	14.4502	19.8354
MS*Running*Lesic	1	1	1	9	11.7777	8.15134	2.71711	5.5121	18.0434

A5.1.6.1.13. Cylinder Test P49 Total Stepping ANOVA

Effect	Univariate Tests of Significance for Total stepping (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	17591.37	1	17591.37	403.759	0.000000
MS	3.51	1	3.51	0.0806	0.777598
Running	397.78	1	397.78	9.1299	0.003895
Lesion	217.98	1	217.98	5.003	0.029617
MS*Running	0.05	1	0.05	0.0012	0.972512
MS*Lesion	0.15	1	0.15	0.0033	0.954203
Running*Lesion	7.77	1	7.77	0.1784	0.674461
MS*Running*Lesion	7.11	1	7.11	0.1632	0.687904
Error	2265.59	52	43.57		

A5.1.6.1.14. Cylinder Test P49 Total stepping post hoc Newman Keuls test (Running)

Newman-Keuls test; variable Total stepping (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 43.569, df = 52.000

Cell No.	Running	{1} 19.926	{2} 14.576
1	0		0.003064
2	1	0.003064	

A5.1.6.1.15. Cylinder Test P49 Total stepping post hoc Newman Keuls test (Lesion)

Newman-Keuls test; variable Total stepping (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 43.569, df = 52.000

Cell No.	Lesion	{1} 19.033	{2} 14.933
1	0		0.019845
2	1	0.019845	

A5.1.6.1.16. Cylinder Test P49 Total Movements Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P49)								
	Level of Factor	Level of Factor	Level of Factor	N	Total movement Mean	Total movement Std.Dev.	Total movement Std.Err	Total movement -95.00%	Total movement +95.00%
Total				60	60.6666	21.2632	2.74506	55.1738	66.1595
MS	0			31	60.1612	21.7364	3.90398	52.1883	68.1342
MS	1			29	61.2069	21.1159	3.92113	53.1748	69.2389
Running	0			27	73.5185	18.9663	3.65006	66.0157	81.0213
Running	1			33	50.1515	16.9689	2.95391	44.1345	56.1684
Lesion	0			30	65.5000	20.0236	3.65580	58.0230	72.9769
Lesion	1			30	55.8333	21.6923	3.96046	47.7332	63.9333
MS*Running	0	0		14	70.1428	21.9329	5.86183	57.4791	82.8065
MS*Running	0	1		17	51.9411	18.3319	4.44614	42.5157	61.3665
MS*Running	1	0		13	77.1538	15.1868	4.21208	67.9765	86.3311
MS*Running	1	1		16	48.2500	15.7586	3.93964	39.8528	56.6471
MS*Lesion	0	0		16	61.8125	20.8461	5.21154	50.7043	72.9206
MS*Lesion	0	1		15	58.4000	23.2465	6.00222	45.5265	71.2734
MS*Lesion	1	0		14	69.7142	18.8982	5.05076	58.8027	80.6258
MS*Lesion	1	1		15	53.2666	20.4990	5.29282	41.9146	64.6186
Running*Lesion	0	0		14	75.2857	19.9708	5.33743	63.7548	86.8165
Running*Lesion	0	1		13	71.6153	18.4324	5.11225	60.4767	82.7540
Running*Lesion	1	0		16	56.9375	16.1842	4.04605	48.3135	65.5614
Running*Lesion	1	1		17	43.7647	15.5222	3.76470	35.7838	51.7455
MS*Running*Lesi	0	0	0	7	69.0000	19.3735	7.32250	51.0824	86.9175
MS*Running*Lesi	0	0	1	7	71.2857	25.7663	9.73876	47.4558	95.1156
MS*Running*Lesi	0	1	0	9	56.2222	21.2824	7.09416	39.8630	72.5813
MS*Running*Lesi	0	1	1	8	47.1250	14.1566	5.00513	35.2897	58.9602
MS*Running*Lesi	1	0	0	7	81.5714	19.9153	7.52727	63.1528	99.9900
MS*Running*Lesi	1	0	1	6	72.0000	4.2895	1.75119	67.4984	76.5015
MS*Running*Lesi	1	1	0	7	57.8571	7.0102	2.64960	51.3737	64.3404
MS*Running*Lesi	1	1	1	9	40.7777	16.8877	5.62923	27.7967	53.7588

A5.1.6.1.17. Cylinder Test P49 Total Movements ANOVA

Effect	Univariate Tests of Significance for Total movements (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	226529.7	1	226529.7	722.228	0.000000
MS	67.7	1	67.7	0.2159	0.644103
Running	7777.5	1	7777.5	24.7963	0.000007
Lesion	1031.7	1	1031.7	3.2893	0.075505
MS*Running	298.5	1	298.5	0.9516	0.333836
MS*Lesion	362.7	1	362.7	1.1562	0.287212
Running*Lesion	328.8	1	328.8	1.0483	0.310632
MS*Running*Lesion	13.8	1	13.8	0.0441	0.834470
Error	16310.0	52	313.7		

A5.1.6.1.18. Cylinder Test P49 Total movements post hoc Newman Keuls test (running Effect)

Newman-Keuls test; variable Total movements (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 313.65, df = 52.000

Cell No.	Running	{1} 73.519	{2} 50.152
1	0		0.000118
2	1	0.000118	

A5.1.6.1.19. Cylinder Test P49 Total movements post hoc Newman Keuls test (MS*Running*Lesion)

Newman-Keuls test; variable Total movements (Cylinder test F
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 313.65, df = 52.000

Cell No.	MS	Running	Lesion	{1} 69.000	{2} 71.286	{3} 56.222	{4} 47.125
1	0	0	0		0.80540	0.35610	0.09555
2	0	0	1	0.80540		0.36962	0.08162
3	0	1	0	0.35610	0.36962		0.32877
4	0	1	1	0.09555	0.08162	0.32877	
5	1	0	0	0.52810	0.50935	0.08298	0.00808
6	1	0	1	0.94353	0.93866	0.43682	0.09332
7	1	1	0	0.23264	0.32059	0.86012	0.48023
8	1	1	1	0.02776	0.02022	0.22479	0.49462

Newman-Keuls test; variable Total movements (Cylinder test F
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 313.65, df = 52.000

Cell No.	MS	Running	Lesion	{5} 81.571	{6} 72.000	{7} 57.857	{8} 40.778
1	0	0	0	0.52810	0.94353	0.23264	0.02776
2	0	0	1	0.50935	0.93866	0.32059	0.02022
3	0	1	0	0.08298	0.43682	0.86012	0.22479
4	0	1	1	0.00808	0.09332	0.48023	0.49462
5	1	0	0		0.30440	0.09105	0.00132
6	1	0	1	0.30440		0.42561	0.02177
7	1	1	0	0.09105	0.42561		0.26166
8	1	1	1	0.00132	0.02177	0.26166	

A5.1.6.2.1. Cylinder Test: P63 Data Spreadsheet

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Rearing Left	5 Rearing Right	6 Rearing Both	7 Rearing Unsure	8 Stepping Left
227	**0**	**0**	**1**	17	1	12	2	1
129	**1**	**1**	**1**	15	3	17	1	2
207	**0**	**1**	**1**	9	14	21	1	0
164	**1**	**1**	**0**	22	14	34	3	3
141	**1**	**0**	**1**	16	15	23	1	0
174	**0**	**1**	**0**	23	13	37	5	4
148	**1**	**0**	**0**	21	5	27	5	3
176	**0**	**0**	**0**	12	11	16	1	2
195	**1**	**1**	**1**	11	9	11	3	1
135	**1**	**0**	**1**	17	6	15	3	2
154	**1**	**0**	**1**	15	6	13	3	2
122	**1**	**1**	**0**	12	18	32	4	3
197	**1**	**0**	**0**	10	7	19	2	2
222	**0**	**1**	**0**	9	19	30	3	3
193	**0**	**0**	**1**	19	1	14	2	7
203	**0**	**1**	**1**	12	1	8	1	3
167	**0**	**0**	**0**	7	17	34	2	0
182	**1**	**1**	**1**	11	3	8	0	2
209	**1**	**0**	**1**	25	1	12	0	12
216	**1**	**1**	**0**	8	9	18	0	0
144	**1**	**0**	**0**	13	5	13	0	2
234	**0**	**0**	**1**	8	2	8	0	1
169	**0**	**0**	**0**	7	10	14	0	1
117	**0**	**0**	**1**	6	12	17	0	2
188	**0**	**1**	**1**	14	0	9	1	4
138	**1**	**1**	**0**	8	10	16	3	1
220	**1**	**1**	**1**	13	5	19	1	1
191	**0**	**1**	**1**	19	1	20	1	4
157	**1**	**0**	**1**	2	0	2	0	1
160	**0**	**0**	**0**	5	9	16	1	0
126	**0**	**0**	**1**	13	9	20	0	0
131	**0**	**1**	**0**	12	3	16	2	0
210	**0**	**1**	**1**	7	5	12	1	0
232	**0**	**1**	**0**	8	6	9	2	0
196	**1**	**1**	**0**	3	4	9	1	0
139	**1**	**0**	**0**	14	4	13	0	3
198	**1**	**1**	**1**	12	0	1	1	3
143	**1**	**0**	**1**	13	5	19	0	1
145	**1**	**1**	**1**	17	0	6	0	4
190	**1**	**0**	**0**	6	9	14	1	1
137	**0**	**1**	**1**	13	0	3	1	7
171	**0**	**0**	**0**	12	10	18	0	1
219	**0**	**0**	**0**	5	8	12	0	1
205	**0**	**0**	**1**	7	7	13	2	0
250	**1**	**0**	**0**	3	3	14	1	1

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Stepping Right	5 Stepping Both	6 Stepping Unsure	7 Combine Left	8 Combine d Right
227	**0**	**0**	**1**	0	6	0	18	1
129	**1**	**1**	**1**	3	9	0	17	6
207	**0**	**1**	**1**	0	10	0	9	14
164	**1**	**1**	**0**	2	30	0	25	16
141	**1**	**0**	**1**	3	16	1	16	18
174	**0**	**1**	**0**	1	27	0	27	14
148	**1**	**0**	**0**	1	12	0	24	6
176	**0**	**0**	**0**	2	5	0	14	13
195	**1**	**1**	**1**	2	6	0	12	11
135	**1**	**0**	**1**	1	15	0	19	7
154	**1**	**0**	**1**	2	6	0	17	8
122	**1**	**1**	**0**	3	26	0	15	21
197	**1**	**0**	**0**	1	9	0	12	8
222	**0**	**1**	**0**	2	15	1	12	21
193	**0**	**0**	**1**	0	5	0	26	1
203	**0**	**1**	**1**	0	2	0	15	1
167	**0**	**0**	**0**	2	24	0	7	19
182	**1**	**1**	**1**	0	5	0	13	3
209	**1**	**0**	**1**	0	2	0	37	1
216	**1**	**1**	**0**	0	15	0	8	9
144	**1**	**0**	**0**	1	9	0	15	6
234	**0**	**0**	**1**	0	2	0	9	2
169	**0**	**0**	**0**	0	7	0	8	10
117	**0**	**0**	**1**	1	14	0	8	13
188	**0**	**1**	**1**	0	5	0	18	0
138	**1**	**1**	**0**	1	13	0	9	11
220	**1**	**1**	**1**	0	14	0	14	5
191	**0**	**1**	**1**	0	7	0	23	1
157	**1**	**0**	**1**	0	0	0	3	0
160	**0**	**0**	**0**	1	9	0	5	10
126	**0**	**0**	**1**	0	12	0	13	9
131	**0**	**1**	**0**	0	12	0	12	3
210	**0**	**1**	**1**	0	13	0	7	5
232	**0**	**1**	**0**	0	10	0	8	6
196	**1**	**1**	**0**	0	4	0	3	4
139	**1**	**0**	**0**	0	7	0	17	4
198	**1**	**1**	**1**	0	1	0	15	0
143	**1**	**0**	**1**	0	3	1	14	5
145	**1**	**1**	**1**	0	0	0	21	0
190	**1**	**0**	**0**	0	12	0	7	9
137	**0**	**1**	**1**	0	2	0	20	0
171	**0**	**0**	**0**	1	8	0	13	11
219	**0**	**0**	**0**	1	6	0	6	9
205	**0**	**0**	**1**	1	9	0	7	8
250	**1**	**0**	**0**	0	5	0	4	3

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Combined Both	5 Combined All	6 Half Both	7 % Left limb use	8 Grooming
227	**0**	**0**	**1**	18	37	9	**73.0**	159
129	**1**	**1**	**1**	26	49	13	**61.2**	110
207	**0**	**1**	**1**	31	54	15.5	**45.4**	188
164	**1**	**1**	**0**	64	105	32	**54.3**	163
141	**1**	**0**	**1**	39	73	19.5	**48.6**	106
174	**0**	**1**	**0**	64	105	32	**56.2**	86
148	**1**	**0**	**0**	39	69	19.5	**63.0**	69
176	**0**	**0**	**0**	21	48	10.5	**51.0**	139
195	**1**	**1**	**1**	17	40	8.5	**51.3**	66
135	**1**	**0**	**1**	30	56	15	**60.7**	21
154	**1**	**0**	**1**	19	44	9.5	**60.2**	71
122	**1**	**1**	**0**	58	94	29	**46.8**	146
197	**1**	**0**	**0**	28	48	14	**54.2**	158
222	**0**	**1**	**0**	45	78	22.5	**44.2**	130
193	**0**	**0**	**1**	19	46	9.5	**77.2**	135
203	**0**	**1**	**1**	10	26	5	**76.9**	190
167	**0**	**0**	**0**	58	84	29	**42.9**	154
182	**1**	**1**	**1**	13	29	6.5	**67.2**	26
209	**1**	**0**	**1**	14	52	7	**84.6**	56
216	**1**	**1**	**0**	33	50	16.5	**49.0**	150
144	**1**	**0**	**0**	22	43	11	**60.5**	140
234	**0**	**0**	**1**	10	21	5	**66.7**	173
169	**0**	**0**	**0**	21	39	10.5	**47.4**	100
117	**0**	**0**	**1**	31	52	15.5	**45.2**	94
188	**0**	**1**	**1**	14	32	7	**78.1**	105
138	**1**	**1**	**0**	29	49	14.5	**48.0**	186
220	**1**	**1**	**1**	33	52	16.5	**58.7**	263
191	**0**	**1**	**1**	27	51	13.5	**71.6**	145
157	**1**	**0**	**1**	2	5	1	**80.0**	208
160	**0**	**0**	**0**	25	40	12.5	**43.8**	142
126	**0**	**0**	**1**	32	54	16	**53.7**	246
131	**0**	**1**	**0**	28	43	14	**60.5**	113
210	**0**	**1**	**1**	25	37	12.5	**52.7**	64
232	**0**	**1**	**0**	19	33	9.5	**53.0**	117
196	**1**	**1**	**0**	13	20	6.5	**47.5**	168
139	**1**	**0**	**0**	20	41	10	**65.9**	115
198	**1**	**1**	**1**	2	17	1	**94.1**	104
143	**1**	**0**	**1**	22	41	11	**61.0**	183
145	**1**	**1**	**1**	6	27	3	**88.9**	185
190	**1**	**0**	**0**	26	42	13	**47.6**	160
137	**0**	**1**	**1**	5	25	2.5	**90.0**	187
171	**0**	**0**	**0**	26	50	13	**52.0**	106
219	**0**	**0**	**0**	18	33	9	**45.5**	129
205	**0**	**0**	**1**	22	37	11	**48.6**	146
250	**1**	**0**	**0**	19	26	9.5	**51.9**	136

	P63 (2)						
	1 MS	2 Running	3 Lesion	4 % Grooming	5 Total rearing	6 Total stepping	7 Total movements
227	**0**	**0**	**1**	**31.8**	32	7	39
129	**1**	**1**	**1**	**22.0**	36	14	50
207	**0**	**1**	**1**	**37.6**	45	10	55
164	**1**	**1**	**0**	**32.6**	73	35	108
141	**1**	**0**	**1**	**21.2**	55	20	75
174	**0**	**1**	**0**	**17.2**	78	32	110
148	**1**	**0**	**0**	**13.8**	58	16	74
176	**0**	**0**	**0**	**27.8**	40	9	49
195	**1**	**1**	**1**	**13.2**	34	9	43
135	**1**	**0**	**1**	**4.2**	41	18	59
154	**1**	**0**	**1**	**14.2**	37	10	47
122	**1**	**1**	**0**	**29.2**	66	32	98
197	**1**	**0**	**0**	**31.6**	38	12	50
222	**0**	**1**	**0**	**26.0**	61	21	82
193	**0**	**0**	**1**	**27.0**	36	12	48
203	**0**	**1**	**1**	**38.0**	22	5	27
167	**0**	**0**	**0**	**30.8**	60	26	86
182	**1**	**1**	**1**	**5.2**	22	7	29
209	**1**	**0**	**1**	**11.2**	38	14	52
216	**1**	**1**	**0**	**30.0**	35	15	50
144	**1**	**0**	**0**	**28.0**	31	12	43
234	**0**	**0**	**1**	**34.6**	18	3	21
169	**0**	**0**	**0**	**20.0**	31	8	39
117	**0**	**0**	**1**	**18.8**	35	17	52
188	**0**	**1**	**1**	**23.1**	24	9	33
138	**1**	**1**	**0**	**37.2**	37	15	52
220	**1**	**1**	**1**	**52.6**	38	15	53
191	**0**	**1**	**1**	**29.0**	41	11	52
157	**1**	**0**	**1**	**41.6**	4	1	5
160	**0**	**0**	**0**	**28.4**	31	10	41
126	**0**	**0**	**1**	**49.2**	42	12	54
131	**0**	**1**	**0**	**22.6**	33	12	45
210	**0**	**1**	**1**	**12.8**	25	13	38
232	**0**	**1**	**0**	**23.4**	25	10	35
196	**1**	**1**	**0**	**33.6**	17	4	21
139	**1**	**0**	**0**	**23.0**	31	10	41
198	**1**	**1**	**1**	**20.8**	14	4	18
143	**1**	**0**	**1**	**36.6**	37	5	42
145	**1**	**1**	**1**	**37.0**	23	4	27
190	**1**	**0**	**0**	**32.0**	30	13	43
137	**0**	**1**	**1**	**37.4**	17	9	26
171	**0**	**0**	**0**	**21.2**	40	10	50
219	**0**	**0**	**0**	**25.8**	25	8	33
205	**0**	**0**	**1**	**29.2**	29	10	39
250	**1**	**0**	**0**	**27.2**	21	6	27

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Rearing Left	5 Rearing Right	6 Rearing Both	7 Rearing Unsure	8 Stepping Left
271	**1**	**1**	**0**	7	1	8	0	1
305	**0**	**1**	**0**	9	4	10	0	0
301	**0**	**1**	**1**	10	0	3	0	3
306	**1**	**1**	**1**	3	0	4	1	1
309	**1**	**0**	**1**	8	5	15	0	1
311	**0**	**0**	**0**	5	6	12	1	0
315	**0**	**0**	**0**	4	5	12	0	0
312	**0**	**1**	**1**	9	1	5	0	4
314	**0**	**1**	**0**	12	3	22	3	3
313	**0**	**1**	**0**	4	2	8	0	1
317	**1**	**1**	**1**	15	1	2	0	4
318	**1**	**1**	**0**	7	7	16	0	0
319	**1**	**1**	**0**	7	7	17	0	1
320	**1**	**1**	**1**	18	3	12	0	10
324	**0**	**1**	**0**	6	10	13	0	3
323	**0**	**1**	**0**	6	6	29	0	0
322	**0**	**0**	**1**	14	1	7	0	4

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Stepping Right	5 Stepping Both	6 Stepping Unsure	7 Combined Left	8 Combined Right
271	**1**	**1**	**0**	0	3	0	8	1
305	**0**	**1**	**0**	1	5	0	9	5
301	**0**	**1**	**1**	0	0	0	13	0
306	**1**	**1**	**1**	0	2	0	4	0
309	**1**	**0**	**1**	0	10	0	9	5
311	**0**	**0**	**0**	0	8	0	5	6
315	**0**	**0**	**0**	0	5	0	4	5
312	**0**	**1**	**1**	0	1	0	13	1
314	**0**	**1**	**0**	0	9	0	15	3
313	**0**	**1**	**0**	0	5	0	5	2
317	**1**	**1**	**1**	0	0	0	19	1
318	**1**	**1**	**0**	1	5	0	7	8
319	**1**	**1**	**0**	1	7	0	8	8
320	**1**	**1**	**1**	0	4	0	28	3
324	**0**	**1**	**0**	0	3	0	9	10
323	**0**	**1**	**0**	2	22	0	6	8
322	**0**	**0**	**1**	0	2	0	18	1

	P63 (2)							
	1 MS	2 Running	3 Lesion	4 Combined Both	5 Combined All	6 Half Both	7 % Left limb use	8 Grooming
271	**1**	**1**	**0**	11	20	5.5	**67.5**	4
305	**0**	**1**	**0**	15	29	7.5	**56.9**	67
301	**0**	**1**	**1**	3	16	1.5	**90.6**	193
306	**1**	**1**	**1**	6	10	3	**70.0**	127
309	**1**	**0**	**1**	25	39	12.5	**55.1**	88
311	**0**	**0**	**0**	20	31	10	**48.4**	123
315	**0**	**0**	**0**	17	26	8.5	**48.1**	137
312	**0**	**1**	**1**	6	20	3	**80.0**	39
314	**0**	**1**	**0**	31	49	15.5	**62.2**	167
313	**0**	**1**	**0**	13	20	6.5	**57.5**	174
317	**1**	**1**	**1**	2	22	1	**90.9**	63
318	**1**	**1**	**0**	21	36	10.5	**48.6**	110
319	**1**	**1**	**0**	24	40	12	**50.0**	165
320	**1**	**1**	**1**	16	47	8	**76.6**	162
324	**0**	**1**	**0**	16	35	8	**48.6**	141
323	**0**	**1**	**0**	51	65	25.5	**48.5**	88
322	**0**	**0**	**1**	9	28	4.5	**80.4**	168

	P63 (2)						
	1 MS	2 Running	3 Lesion	4 % Grooming	5 Total rearing	6 Total stepping	7 Total movements
271	**1**	**1**	**0**	**0.8**	16	4	20
305	**0**	**1**	**0**	**13.4**	23	6	29
301	**0**	**1**	**1**	**38.6**	13	3	16
306	**1**	**1**	**1**	**25.4**	8	3	11
309	**1**	**0**	**1**	**17.6**	28	11	39
311	**0**	**0**	**0**	**24.6**	24	8	32
315	**0**	**0**	**0**	**27.4**	21	5	26
312	**0**	**1**	**1**	**7.8**	15	5	20
314	**0**	**1**	**0**	**33.4**	40	12	52
313	**0**	**1**	**0**	**34.8**	14	6	20
317	**1**	**1**	**1**	**12.6**	18	4	22
318	**1**	**1**	**0**	**22.0**	30	6	36
319	**1**	**1**	**0**	**33.0**	31	9	40
320	**1**	**1**	**1**	**32.4**	33	14	47
324	**0**	**1**	**0**	**28.2**	29	6	35
323	**0**	**1**	**0**	**17.6**	41	24	65
322	**0**	**0**	**1**	**33.6**	22	6	28

A5.1.6.2.2. Cylinder Test P63 Percentage Left Limb Use Descriptive Statistics

	Descriptive Statistics (Cylinder test P63)								
Effect	Level of Factor	Level of Factor	Level of Factor	N	% Left limb use Mean	% Left limb use Std.Dev.	% Left limb use Std.Err	% Left limb use -95.00%	% Left limb use +95.00%
Total				62	60.6537	14.2091	1.80455	57.0453	64.2621
MS	0			32	59.2695	14.4713	2.55818	54.0520	64.4869
MS	1			30	62.1302	14.0161	2.55899	56.8965	67.3639
Running	0			28	57.7528	12.1317	2.29268	53.0486	62.4570
Running	1			34	63.0426	15.4844	2.65555	57.6399	68.4454
Lesion	0			31	52.3009	6.6305	1.19087	49.8688	54.7330
Lesion	1			31	69.0065	14.9122	2.67831	63.5366	74.4763
MS*Running	0	0		15	54.9145	12.7351	3.28820	47.8620	61.9670
MS*Running	0	1		17	63.1121	15.1779	3.68118	55.3083	70.9158
MS*Running	1	0		13	61.0278	10.9658	3.04138	54.4012	67.6544
MS*Running	1	1		17	62.9732	16.2524	3.94178	54.6170	71.3294
MS*Lesion	0	0		17	50.9761	5.9212	1.43610	47.9317	54.0205
MS*Lesion	0	1		15	68.6686	15.6674	4.04532	59.9923	77.3450
MS*Lesion	1	0		14	53.9096	7.2952	1.94973	49.6975	58.1218
MS*Lesion	1	1		16	69.3232	14.6773	3.66933	61.5022	77.1442
Running*Lesion	0	0		14	51.5767	7.0798	1.89217	47.4889	55.6645
Running*Lesion	0	1		14	63.9290	13.1680	3.51932	56.3259	71.5320
Running*Lesion	1	0		17	52.8973	6.3928	1.55049	49.6104	56.1843
Running*Lesion	1	1		17	73.1879	15.3274	3.71745	65.3073	81.0686
MS*Running*Les	0	0	0	8	47.3754	3.2424	1.14638	44.6646	50.0861
MS*Running*Les	0	0	1	7	63.5307	14.2746	5.39532	50.3288	76.7326
MS*Running*Les	0	1	0	9	54.1767	6.0358	2.01196	49.5372	58.8163
MS*Running*Les	0	1	1	8	73.1643	16.3336	5.77480	59.5091	86.8195
MS*Running*Les	1	0	0	6	57.1785	7.0502	2.87826	49.7797	64.5773
MS*Running*Les	1	0	1	7	64.3272	13.0981	4.95061	52.2135	76.4410
MS*Running*Les	1	1	0	8	51.4580	6.8779	2.43170	45.7079	57.2081
MS*Running*Les	1	1	1	9	73.2090	15.3760	5.12534	61.3899	85.0280

A5.1.6.2.3. Cylinder Test P63 Percentage Left Limb Use ANOVA

	Univariate Tests of Significance for % Left limb use (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	223573.0	1	223573.0	1735.722	0.000000
MS	59.8	1	59.8	0.465	0.498388
Running	365.9	1	365.9	2.840	0.097692
Lesion	3907.6	1	3907.6	30.337	0.000001
MS*Running	167.9	1	167.9	1.303	0.258663
MS*Lesion	37.1	1	37.1	0.288	0.593515
Running*Lesion	289.6	1	289.6	2.248	0.139588
MS*Running*Lesion	132.0	1	132.0	1.025	0.315926
Error	6955.6	54	128.8		

A5.1.6.2.4. Cylinder Test P63 Percentage Left Limb Use post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable % Left limb use (Cylinder test I
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 128.81, df = 54.000

Cell No.	Lesion	{1} 52.301	{2} 69.007
1	0		0.000113
2	1	0.000113	

A5.1.6.2.5. Cylinder Test P63 Percentage Left Limb use post hoc Newman Keuls test (MS*Running*lesion)

Newman-Keuls test; variable % Left limb use (Cylinder test P6
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 128.81, df = 54.000

Cell No.	MS	Running	Lesion	{1} 47.375	{2} 63.531	{3} 54.177	{4} 73.164
1	0	0	0		0.05567	0.47616	0.00097
2	0	0	1	0.05567		0.25072	0.23115
3	0	1	0	0.47616	0.25072		0.01572
4	0	1	1	0.00097	0.23115	0.01572	
5	1	0	0	0.34093	0.27950	0.60784	0.03938
6	1	0	1	0.05511	0.89163	0.31062	0.13444
7	1	1	0	0.48566	0.17389	0.64204	0.00589
8	1	1	1	0.00118	0.35220	0.02179	0.99399

Newman-Keuls test; variable % Left limb use (Cylinder test P6
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 128.81, df = 54.000

Cell No.	MS	Running	Lesion	{5} 57.179	{6} 64.327	{7} 51.458	{8} 73.209
1	0	0	0	0.34093	0.05511	0.48566	0.00118
2	0	0	1	0.27950	0.89163	0.17389	0.35220
3	0	1	0	0.60784	0.31062	0.64204	0.02179
4	0	1	1	0.03938	0.13444	0.00589	0.99399
5	1	0	0		0.44118	0.59015	0.05862
6	1	0	1	0.44118		0.19044	0.28623
7	1	1	0	0.59015	0.19044		0.00772
8	1	1	1	0.05862	0.28623	0.00772	

A5.1.6.2.6. Cylinder Test P63 Percentage Grooming Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P63 in Workbook2)								
	Level of Factor	Level of Factor	Level of Factor	N	% Grooming Mean	% Grooming Std.Dev.	% Grooming Std.Err	% Grooming -95.00%	% Grooming +95.00%
Total				62	26.0141	10.3777	1.31798	23.3786	28.6496
MS	0			32	27.2211	8.7370	1.54450	24.0711	30.3712
MS	1			30	24.7266	11.9002	2.17267	20.2830	29.1702
Running	0			28	26.1571	9.3778	1.77225	22.5207	29.7935
Running	1			34	25.8963	11.2735	1.93339	21.9628	29.8299
Lesion	0			31	25.6967	7.6113	1.36704	22.9049	28.4886
Lesion	1			31	26.3315	12.6825	2.27784	21.6795	30.9834
MS*Running	0	0		15	28.6800	7.3386	1.89483	24.6159	32.7440
MS*Running	0	1		17	25.9339	9.8499	2.38896	20.8695	30.9983
MS*Running	1	0		13	23.2461	10.8585	3.01161	16.6844	29.8079
MS*Running	1	1		17	25.8588	12.8492	3.11640	19.2523	32.4653
MS*Lesion	0	0		17	24.8588	5.7826	1.40249	21.8856	27.8319
MS*Lesion	0	1		15	29.8984	10.7869	2.78517	23.9248	35.8720
MS*Lesion	1	0		14	26.7142	9.5133	2.54253	21.2214	32.2071
MS*Lesion	1	1		16	22.9875	13.7273	3.43183	15.6727	30.3022
Running*Lesion	0	0		14	25.8285	5.0020	1.33685	22.9404	28.7166
Running*Lesion	0	1		14	26.4857	12.5459	3.35305	19.2418	33.7295
Running*Lesion	1	0		17	25.5882	9.3950	2.27863	20.7577	30.4187
Running*Lesion	1	1		17	26.2045	13.1780	3.19613	19.4290	32.9800
MS*Running*Les	0	0	0	8	25.7500	3.6750	1.29931	22.6776	28.8223
MS*Running*Les	0	0	1	7	32.0285	9.2400	3.49242	23.4829	40.5742
MS*Running*Les	0	1	0	9	24.0666	7.3184	2.43949	18.4411	29.6921
MS*Running*Les	0	1	1	8	28.0346	12.2892	4.34492	17.7605	38.3087
MS*Running*Les	1	0	0	6	25.9333	6.7913	2.77256	18.8062	33.0604
MS*Running*Les	1	0	1	7	20.9428	13.5635	5.12653	8.3986	33.4870
MS*Running*Les	1	1	0	8	27.3000	11.5852	4.09599	17.6145	36.9854
MS*Running*Les	1	1	1	9	24.5777	14.4514	4.81715	13.4694	35.6861

A5.1.6.2.7. Cylinder Test P63 Percentage Grooming ANOVA

Effect	Univariate Tests of Significance for % Grooming (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	41470.98	1	41470.98	370.9398	0.000000
MS	117.94	1	117.94	1.0549	0.308965
Running	0.43	1	0.43	0.0039	0.950493
Lesion	6.12	1	6.12	0.0547	0.815942
MS*Running	108.65	1	108.65	0.9718	0.328624
MS*Lesion	307.29	1	307.29	2.7486	0.103140
Running*Lesion	0.00	1	0.00	0.0000	0.996894
MS*Running*Lesion	19.98	1	19.98	0.1787	0.674197
Error	6037.19	54	111.80		

A5.1.6.2.8. Cylinder Test P63 Total Rearing Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P63 in Workbook2)								
	Level of Factor	Level of Factor	Level of Factor	N	Total rearing Mean	Total rearing Std.Dev.	Total rearing Std.Err	Total rearing -95.00%	Total rearing +95.00%
Total				62	32.4516	14.8739	1.88899	28.6743	36.2289
MS	0			32	32.2500	14.4579	2.55582	27.0373	37.4626
MS	1			30	32.6666	15.5504	2.83910	26.8600	38.4733
Running	0			28	33.3928	11.9546	2.25921	28.7573	38.0283
Running	1			34	31.6764	17.0484	2.92378	25.7279	37.6249
Lesion	0			31	36.4516	16.6289	2.98665	30.3520	42.5511
Lesion	1			31	28.4516	11.8429	2.12706	24.1075	32.7956
MS*Running	0	0		15	32.4000	10.6086	2.73913	26.5251	38.2748
MS*Running	0	1		17	32.1176	17.5067	4.24600	23.1165	41.1187
MS*Running	1	0		13	34.5384	13.6968	3.79881	26.2615	42.8153
MS*Running	1	1		17	31.2352	17.1045	4.14846	22.4409	40.0296
MS*Lesion	0	0		17	36.2352	16.6001	4.02613	27.7002	44.7703
MS*Lesion	0	1		15	27.7333	10.3334	2.66809	22.0108	33.4558
MS*Lesion	1	0		14	36.7142	17.2868	4.62010	26.7331	46.6954
MS*Lesion	1	1		16	29.1250	13.4108	3.35270	21.9788	36.2711
Running*Lesion	0	0		14	34.3571	12.1186	3.23885	27.3600	41.3542
Running*Lesion	0	1		14	32.4285	12.1637	3.25089	25.4054	39.4516
Running*Lesion	1	0		17	38.1764	19.8028	4.80290	27.9947	48.3581
Running*Lesion	1	1		17	25.1764	10.8411	2.62935	19.6024	30.7504
MS*Running*Les	0	0	0	8	34.0000	12.6265	4.46414	23.4439	44.5560
MS*Running*Les	0	0	1	7	30.5714	8.3238	3.14610	22.8731	38.2696
MS*Running*Les	0	1	0	9	38.2222	20.0547	6.68492	22.8067	53.6377
MS*Running*Les	0	1	1	8	25.2500	11.7928	4.16940	15.3909	35.1090
MS*Running*Les	1	0	0	6	34.8333	12.5764	5.13430	21.6351	48.0314
MS*Running*Les	1	0	1	7	34.2857	15.5960	5.89476	19.8617	48.7096
MS*Running*Les	1	1	0	8	38.1250	20.8972	7.38830	20.6544	55.5955
MS*Running*Les	1	1	1	9	25.1111	10.6471	3.54903	16.9270	33.2952

A5.1.6.2.9. Cylinder Test P63 Total Rearing ANOVA

Effect	Univariate Tests of Significance for Total rearing (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	64603.02	1	64603.02	292.2529	0.000000
MS	17.71	1	17.71	0.0801	0.778218
Running	46.45	1	46.45	0.2101	0.648516
Lesion	855.31	1	855.31	3.8693	0.054324
MS*Running	21.80	1	21.80	0.0986	0.754689
MS*Lesion	7.68	1	7.68	0.0347	0.852828
Running*Lesion	461.54	1	461.54	2.0879	0.154244
MS*Running*Lesion	8.14	1	8.14	0.0368	0.848562
Error	11936.80	54	221.05		

A5.1.6.2.10. Cylinder Test P63 Total Stepping Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P63 in Workbook2)								
	Level c Factor	Level of Factor	Level of Factor	N	Total stepping Mean	Total stepping Std.Dev.	Total stepping Std.Err	Total stepping -95.00%	Total stepping +95.00%
Total				62	11.0806	7.1844	0.91242	9.25613	12.9051
MS	0			32	10.7812	6.6562	1.17666	8.38142	13.1810
MS	1			30	11.4000	7.8106	1.42603	8.48344	14.3165
Running	0			28	10.6785	5.3337	1.00797	8.61037	12.7467
Running	1			34	11.4117	8.4785	1.45406	8.45345	14.3700
Lesion	0			31	12.9677	8.5536	1.53628	9.83022	16.1052
Lesion	1			31	9.1935	4.9424	0.88769	7.38063	11.0064
MS*Running	0	0		15	10.0666	5.5093	1.42249	7.01571	13.1176
MS*Running	0	1		17	11.4117	7.6408	1.85317	7.48321	15.3403
MS*Running	1	0		13	11.3846	5.2525	1.45680	8.21050	14.5587
MS*Running	1	1		17	11.4117	9.4806	2.29939	6.53727	16.2862
MS*Lesion	0	0		17	12.5294	8.0709	1.95748	8.37972	16.6790
MS*Lesion	0	1		15	8.8000	3.9677	1.02446	6.60274	10.9972
MS*Lesion	1	0		14	13.5000	9.3869	2.50877	8.08011	18.9198
MS*Lesion	1	1		16	9.5625	5.8191	1.45478	6.46169	12.6633
Running*Lesion	0	0		14	10.9285	5.1956	1.38858	7.92870	13.9284
Running*Lesion	0	1		14	10.4285	5.6529	1.51081	7.16464	13.6925
Running*Lesion	1	0		17	14.6470	10.4219	2.52770	9.28857	20.0055
Running*Lesion	1	1		17	8.1764	4.1718	1.01182	6.03149	10.3214
MS*Running*Lesi	0	0	0	8	10.5000	6.4586	2.28348	5.10042	15.8995
MS*Running*Lesi	0	0	1	7	9.5714	4.6496	1.75739	5.27123	13.8716
MS*Running*Lesi	0	1	0	9	14.3333	9.2736	3.09120	7.20499	21.4616
MS*Running*Lesi	0	1	1	8	8.1250	3.4408	1.21651	5.24839	11.0016
MS*Running*Lesi	1	0	0	6	11.5000	3.3316	1.36014	8.00363	14.9963
MS*Running*Lesi	1	0	1	7	11.2857	6.7753	2.56082	5.01960	17.5518
MS*Running*Lesi	1	1	0	8	15.0000	12.2357	4.32600	4.77063	25.2293
MS*Running*Lesi	1	1	1	9	8.2222	4.9441	1.64804	4.42182	12.0226

A5.1.6.2.11. Cylinder Test P63 Total Stepping ANOVA

Effect	Univariate Tests of Significance for Total stepping (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	7468.464	1	7468.464	145.748	0.000000
MS	11.526	1	11.526	0.2249	0.637220
Running	7.595	1	7.595	0.1482	0.701758
Lesion	190.194	1	190.194	3.7117	0.059303
MS*Running	3.624	1	3.624	0.0707	0.791292
MS*Lesion	0.020	1	0.020	0.0004	0.984316
Running*Lesion	133.634	1	133.634	2.6079	0.112161
MS*Running*Lesion	1.570	1	1.570	0.0306	0.861700
Error	2767.073	54	51.242		

A5.1.6.2.12. Cylinder Test P63 Total Movements Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P63)								
	Level of Factor	Level of Factor	Level of Factor	N	Total movement Mean	Total movement Std.Dev.	Total movement Std.Err	Total movement -95.00%	Total movement +95.00%
Total				62	43.5322	21.5259	2.7338	38.0656	48.9988
MS	0			32	43.0312	20.4915	3.6224	35.6432	50.4192
MS	1			30	44.0666	22.9180	4.1842	35.5089	52.6244
Running	0			28	44.0714	16.6753	3.1513	37.6053	50.5374
Running	1			34	43.0882	25.0712	4.2996	34.3404	51.8360
Lesion	0			31	49.4193	24.7248	4.4407	40.3502	58.4885
Lesion	1			31	37.6451	16.1008	2.8917	31.7393	43.5509
MS*Running	0	0		15	42.4666	15.6473	4.0401	33.8014	51.1318
MS*Running	0	1		17	43.5294	24.4696	5.9347	30.9482	56.1105
MS*Running	1	0		13	45.9230	18.2504	5.0617	34.8944	56.9516
MS*Running	1	1		17	42.6470	26.4053	6.4042	29.0706	56.2234
MS*Lesion	0	0		17	48.7647	24.1493	5.8570	36.3482	61.1811
MS*Lesion	0	1		15	36.5333	13.3463	3.4460	29.1424	43.9242
MS*Lesion	1	0		14	50.2142	26.3005	7.0291	35.0287	65.3997
MS*Lesion	1	1		16	38.6875	18.7037	4.6759	28.7209	48.6540
Running*Lesion	0	0		14	45.2857	16.7810	4.4849	35.5966	54.9748
Running*Lesion	0	1		14	42.8571	17.1098	4.5728	32.9782	52.7360
Running*Lesion	1	0		17	52.8235	29.8354	7.2361	37.4835	68.1635
Running*Lesion	1	1		17	33.3529	14.3132	3.4714	25.9937	40.7121
MS*Running*Lesi	0	0	0	8	44.5000	18.6930	6.6089	28.8722	60.1277
MS*Running*Lesi	0	0	1	7	40.1428	12.3211	4.6569	28.7477	51.5379
MS*Running*Lesi	0	1	0	9	52.5555	28.7450	9.5816	30.4601	74.6509
MS*Running*Lesi	0	1	1	8	33.3750	14.2019	5.0211	21.5018	45.2481
MS*Running*Lesi	1	0	0	6	46.3333	15.5134	6.3333	30.0529	62.6136
MS*Running*Lesi	1	0	1	7	45.5714	21.5704	8.1528	25.6220	65.5208
MS*Running*Lesi	1	1	0	8	53.1250	33.0170	11.6732	25.5220	80.7279
MS*Running*Lesi	1	1	1	9	33.3333	15.2725	5.0908	21.5938	45.0728

A5.1.6.2.13. Cylinder Test P63 Total Movements ANOVA

Effect	Univariate Tests of Significance for Total movements (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	116002.6	1	116002.6	251.8665	0.000000
MS	57.8	1	57.8	0.1255	0.724502
Running	16.5	1	16.5	0.0358	0.850687
Lesion	1852.2	1	1852.2	4.0215	0.049948
MS*Running	43.2	1	43.2	0.0938	0.760569
MS*Lesion	8.5	1	8.5	0.0184	0.892544
Running*Lesion	1091.9	1	1091.9	2.3707	0.129472
MS*Running*Lesion	16.9	1	16.9	0.0366	0.848998
Error	24870.9	54	460.6		

A5.1.6.2.14. Cylinder Test P63 Total Movements post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable Total movements (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 460.57, df = 54.000

Cell No.	Lesion	{1} 49.419	{2} 37.645
1	0		0.03532(
2	1	0.03532(	

A5.1.6.3.1. Cylinder Test P49 and P63 Percentage Left Limb Use Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder te Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	412870.3	1	412870.3	1974.09(	0.00000(
MS	7.5	1	7.5	0.036	0.850712
Run	406.1	1	406.1	1.942	0.169539
Lesion	6634.7	1	6634.7	31.723	0.000001
MS*Run	112.5	1	112.5	0.538	0.466621
MS*Lesion	85.0	1	85.0	0.406	0.526607
Run*Lesion	259.3	1	259.3	1.240	0.270713
MS*Run*Lesion	69.6	1	69.6	0.333	0.566581
Error	10666.4	51	209.1		
TIME	24.2	1	24.2	0.904	0.346076
TIME*MS	27.7	1	27.7	1.036	0.313507
TIME*Run	111.0	1	111.0	4.150	0.046830
TIME*Lesion	0.3	1	0.3	0.012	0.914122
TIME*MS*Run	10.4	1	10.4	0.391	0.534796
TIME*MS*Lesion	12.5	1	12.5	0.468	0.497234
TIME*Run*Lesion	99.0	1	99.0	3.702	0.059941
TIME*MS*Run*Lesion	110.1	1	110.1	4.117	0.047696
Error	1364.1	51	26.7		

A5.1.6.3.2. Cylinder Test P49 and P63 Percentage Left Limb Use repeated measures Post hoc Newman Keuls test (Time*Run)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 117.95, df = 63.835 Run	TIME	{1} 58.425	{2} 57.257	{3} 60.457	{4} 63.500
1	0	P49 % Left Limb us		0.393478	0.478277	0.183893
2	0	P63 % Left Limb us	0.393478		0.503381	0.136612
3	1	P49 % Left Limb us	0.478277	0.503381		0.029326
4	1	P63 % Left Limb us	0.183893	0.136612	0.029326	

A5.1.6.3.3. Cylinder Test P49 and P63 Percentage Left Limb Use repeated measures Post hoc Newman Keuls test (Time*MS*Run*Lesion)

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 117.95, df = 63.835

Cell No.	MS	Run	Lesion	TIME	{1} 50.722	{2} 47.231	{3} 65.295	{4} 63.531
1	0	0	0	P49 % Left Limb us		0.20571	0.26398	0.39375
2	0	0	0	P63 % Left Limb us	0.20571		0.07948	0.14215
3	0	0	1	P49 % Left Limb us	0.26398	0.07948		0.52019
4	0	0	1	P63 % Left Limb us	0.39375	0.14215	0.52019	
5	0	1	0	P49 % Left Limb us	0.99863	0.94680	0.22360	0.29885
6	0	1	0	P63 % Left Limb us	0.99043	0.88600	0.30526	0.36637
7	0	1	1	P49 % Left Limb us	0.06023	0.01191	0.84322	0.78914
8	0	1	1	P63 % Left Limb us	0.01422	0.00231	0.64504	0.54691
9	1	0	0	P49 % Left Limb us	0.99290	0.90208	0.27197	0.37258
10	1	0	0	P63 % Left Limb us	0.91680	0.66195	0.49228	0.51109
11	1	0	1	P49 % Left Limb us	0.27536	0.08196	0.96612	0.93442
12	1	0	1	P63 % Left Limb us	0.54131	0.23651	0.80654	0.75204
13	1	1	0	P49 % Left Limb us	0.83022	0.68847	0.33888	0.47431
14	1	1	0	P63 % Left Limb us	0.97468	0.84173	0.29298	0.41046
15	1	1	1	P49 % Left Limb us	0.20747	0.05521	0.96730	0.94509
16	1	1	1	P63 % Left Limb us	0.01566	0.00253	0.73642	0.62358

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 117.95, df = 63.835

Cell No.	MS	Run	Lesion	TIME	{5} 52.340	{6} 54.177	{7} 70.004	{8} 73.164
1	0	0	0	P49 % Left Limb us	0.99863	0.99043	0.06023	0.01422
2	0	0	0	P63 % Left Limb us	0.94680	0.88600	0.01191	0.00231
3	0	0	1	P49 % Left Limb us	0.22360	0.30526	0.84322	0.64504
4	0	0	1	P63 % Left Limb us	0.29885	0.36637	0.78914	0.54691
5	0	1	0	P49 % Left Limb us		0.50310	0.06843	0.01818
6	0	1	0	P63 % Left Limb us	0.50310		0.12190	0.03737
7	0	1	1	P49 % Left Limb us	0.06843	0.12190		0.25132
8	0	1	1	P63 % Left Limb us	0.01818	0.03737	0.25132	
9	1	0	0	P49 % Left Limb us	0.99215	0.94145	0.07921	0.02090
10	1	0	0	P63 % Left Limb us	0.67597	0.60158	0.28816	0.11447
11	1	0	1	P49 % Left Limb us	0.25634	0.36126	0.71624	0.54549
12	1	0	1	P63 % Left Limb us	0.36432	0.39049	0.69704	0.42367
13	1	1	0	P49 % Left Limb us	0.99990	0.99512	0.09167	0.02366
14	1	1	0	P63 % Left Limb us	0.99761	0.98005	0.08010	0.02063
15	1	1	1	P49 % Left Limb us	0.20967	0.31542	0.56574	0.49931
16	1	1	1	P63 % Left Limb us	0.02103	0.04385	0.84154	0.99389

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 117.95, df = 63.835

Cell No.	MS	Run	Lesion	TIME	{9} 52.282	{10} 57.179	{11} 65.539	{12} 61.715
1	0	0	0	P49 % Left Limb us	0.99290	0.91680	0.27536	0.54131
2	0	0	0	P63 % Left Limb us	0.90208	0.66195	0.08196	0.23651
3	0	0	1	P49 % Left Limb us	0.27197	0.49228	0.96612	0.80654
4	0	0	1	P63 % Left Limb us	0.37258	0.51109	0.93442	0.75204
5	0	1	0	P49 % Left Limb us	0.99215	0.67597	0.25634	0.36432
6	0	1	0	P63 % Left Limb us	0.94145	0.60158	0.36126	0.39049
7	0	1	1	P49 % Left Limb us	0.07921	0.28816	0.71624	0.69704
8	0	1	1	P63 % Left Limb us	0.02090	0.11447	0.54549	0.42367
9	1	0	0	P49 % Left Limb us		0.28629	0.30025	0.47222
10	1	0	0	P63 % Left Limb us	0.28629		0.59059	0.43069
11	1	0	1	P49 % Left Limb us	0.30025	0.59059		0.50267
12	1	0	1	P63 % Left Limb us	0.47222	0.43069	0.50267	
13	1	1	0	P49 % Left Limb us	0.99828	0.94170	0.35760	0.61417
14	1	1	0	P63 % Left Limb us	0.95503	0.89098	0.31545	0.53296
15	1	1	1	P49 % Left Limb us	0.24175	0.55947	0.83975	0.90620
16	1	1	1	P63 % Left Limb us	0.02378	0.13482	0.66689	0.48367

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 117.95, df = 63.835

Cell No.	MS	Run	Lesion	TIME	{13} 51.954	{14} 51.958	{15} 66.701	{16} 73.209
1	0	0	0	P49 % Left Limb us	0.83022	0.97468	0.20747	0.01566
2	0	0	0	P63 % Left Limb us	0.68847	0.84173	0.05521	0.00253
3	0	0	1	P49 % Left Limb us	0.33888	0.29298	0.96730	0.73642
4	0	0	1	P63 % Left Limb us	0.47431	0.41046	0.94509	0.62358
5	0	1	0	P49 % Left Limb us	0.99990	0.99761	0.20967	0.02103
6	0	1	0	P63 % Left Limb us	0.99512	0.98005	0.31542	0.04385
7	0	1	1	P49 % Left Limb us	0.09167	0.08010	0.56574	0.84154
8	0	1	1	P63 % Left Limb us	0.02366	0.02063	0.49931	0.99389
9	1	0	0	P49 % Left Limb us	0.99828	0.95503	0.24175	0.02378
10	1	0	0	P63 % Left Limb us	0.94170	0.89098	0.55947	0.13482
11	1	0	1	P49 % Left Limb us	0.35760	0.31545	0.83975	0.66689
12	1	0	1	P63 % Left Limb us	0.61417	0.53296	0.90620	0.48367
13	1	1	0	P49 % Left Limb us		0.99907	0.28167	0.02628
14	1	1	0	P63 % Left Limb us	0.99907		0.24952	0.02318
15	1	1	1	P49 % Left Limb us	0.28167	0.24952		0.09204
16	1	1	1	P63 % Left Limb us	0.02628	0.02318	0.09204	

A5.1.6.3.4. Cylinder Test P49 and P63 Percentage Grooming Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder te Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	79988.66	1	79988.66	484.1554	0.000000
MS	583.73	1	583.73	3.5332	0.065870
Run	208.93	1	208.93	1.2646	0.266050
Lesion	62.01	1	62.01	0.3753	0.542845
MS*Run	50.96	1	50.96	0.3084	0.581068
MS*Lesion	26.02	1	26.02	0.1575	0.693144
Run*Lesion	7.67	1	7.67	0.0464	0.830245
MS*Run*Lesion	0.00	1	0.00	0.0000	0.998221
Error	8425.85	51	165.21		
TIME	80.33	1	80.33	0.7207	0.399895
TIME*MS	6.14	1	6.14	0.0551	0.815426
TIME*Run	165.33	1	165.33	1.4833	0.228864
TIME*Lesion	69.43	1	69.43	0.6229	0.433637
TIME*MS*Run	102.95	1	102.95	0.9236	0.341071
TIME*MS*Lesion	463.07	1	463.07	4.1545	0.046727
TIME*Run*Lesion	15.34	1	15.34	0.1376	0.712216
TIME*MS*Run*Lesion	154.30	1	154.30	1.3843	0.244834
Error	5684.63	51	111.46		

A5.1.6.3.5. Cylinder Test P49 and P63 Percentage Grooming repeated measures Post hoc Newman Keuls test (Time*MS*Lesion)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 138.34, df = 98.290 MS	Lesion	TIME	{1} 32.900	{2} 24.875	{3} 26.862	{4} 29.898
1	0	0	P49 % Groomin		0.392545	0.350095	0.491338
2	0	0	P63 % Groomin	0.392545		0.990912	0.856141
3	0	1	P49 % Groomin	0.350095	0.990912		0.439805
4	0	1	P63 % Groomin	0.491338	0.856141	0.439805	
5	1	0	P49 % Groomin	0.360183	0.999917	0.897182	0.663855
6	1	0	P63 % Groomin	0.378007	0.995308	0.826699	0.629844
7	1	1	P49 % Groomin	0.444538	0.995195	0.969300	0.779274
8	1	1	P63 % Groomin	0.180638	0.473220	0.846498	0.500525

Cell No.	MS	Lesion	TIME	{5} 24.933	{6} 25.908	{7} 24.902	{8} 21.747
Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 138.34, df = 98.290							
1	0	0	P49 % Groomin	0.36018	0.37800	0.44453	0.18063
2	0	0	P63 % Groomin	0.99991	0.99530	0.99519	0.47322
3	0	1	P49 % Groomin	0.89718	0.82669	0.96930	0.84649
4	0	1	P63 % Groomin	0.66385	0.62984	0.77927	0.50052
5	1	0	P49 % Groomin		0.80368	0.99437	0.88344
6	1	0	P63 % Groomin	0.80368		0.97094	0.87317
7	1	1	P49 % Groomin	0.99437	0.97094		0.69914
8	1	1	P63 % Groomin	0.88344	0.87317	0.69914	

A5.1.6.3.6. Cylinder Test P49 and P63 Total rearing Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (Cylinder te Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	177310.9	1	177310.9	722.094	0.000000
MS	200.1	1	200.1	0.815	0.370893
Run	3400.2	1	3400.2	13.847	0.000495
Lesion	997.4	1	997.4	4.062	0.049143
MS*Run	377.3	1	377.3	1.536	0.220799
MS*Lesion	73.2	1	73.2	0.298	0.587530
Run*Lesion	697.1	1	697.1	2.838	0.098118
MS*Run*Lesion	0.1	1	0.1	0.000	0.984543
Error	12523.1	51	245.6		
TIME	3905.8	1	3905.8	36.306	0.000000
TIME*MS	10.8	1	10.8	0.100	0.753031
TIME*Run	1636.6	1	1636.6	15.212	0.000282
TIME*Lesion	16.1	1	16.1	0.149	0.700753
TIME*MS*Run	69.8	1	69.8	0.649	0.424156
TIME*MS*Lesion	434.6	1	434.6	4.039	0.049741
TIME*Run*Lesion	67.7	1	67.7	0.629	0.431238
TIME*MS*Run*Lesion	157.0	1	157.0	1.459	0.232531
Error	5486.6	51	107.6		

A5.1.6.3.7. Cylinder Test P49 and P63 Total rearing repeated measures Post hoc Newman Keuls test (Time*Run)

Cell No.	Run	TIME	{1} 53.885	{2} 34.885	{3} 35.576	{4} 31.515
Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 176.57, df = 88.491						
1	0	P49Total rearing		0.000123	0.000114	0.000145
2	0	P63Rearing	0.000123		0.843335	0.336295
3	1	P49Total rearin	0.000114	0.843335		0.302842
4	1	P63Rearing	0.000145	0.336295	0.302842	

A5.1.6.3.8. Cylinder Test P49 and P63 Total rearing repeated measures Post hoc Newman Keuls test (Time*MS*Lesion)

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 176.57, df = 88.491

Cell No.	MS	Lesion	TIME	{1} 42.750	{2} 37.000	{3} 42.933	{4} 27.733
1	0	0	P49Total rearir		0.29897	0.97039	0.03376
2	0	0	P63Rearin	0.29897		0.62281	0.24050
3	0	1	P49Total rearir	0.97039	0.62281		0.00411
4	0	1	P63Rearin	0.03376	0.24050	0.00411	
5	1	0	P49Total rearir	0.21213	0.04029	0.10066	0.00029
6	1	0	P63Rearin	0.60684	0.95023	0.70910	0.16723
7	1	1	P49Total rearir	0.43098	0.70469	0.68634	0.16497
8	1	1	P63Rearin	0.11564	0.41961	0.14364	0.53373

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 176.57, df = 88.491

Cell No.	MS	Lesion	TIME	{5} 51.077	{6} 36.692	{7} 38.867	{8} 30.800
1	0	0	P49Total rearir	0.21213	0.60684	0.43098	0.11564
2	0	0	P63Rearin	0.04029	0.95023	0.70469	0.41961
3	0	1	P49Total rearir	0.10066	0.70910	0.68634	0.14364
4	0	1	P63Rearin	0.00029	0.16723	0.16497	0.53373
5	1	0	P49Total rearir		0.00573	0.06879	0.00163
6	1	0	P63Rearin	0.00573		0.89762	0.23312
7	1	1	P49Total rearir	0.06879	0.89762		0.16507
8	1	1	P63Rearin	0.00163	0.23312	0.16507	

A5.1.6.3.9. Cylinder Test P49 and P63 Total rearing repeated measures Post hoc Newman Keuls test (Time)

Newman-Keuls test; variable DV_1 (Cylinder t
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 107.58, df = 51.000

Cell No.	TIME	{1} 43.644	{2} 33.000
1	P49Total rearing		0.00011
2	P63Rearing	0.00011	

A5.1.6.3.10. Cylinder Test P49 and P63 Total rearing repeated measures Post hoc Newman Keuls test (Time*MS*Run*Lesion)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 176.57, df = 88.491							
	MS	Run	Lesion	TIME	{1} 47.000	{2} 35.429	{3} 53.000	{4} 30.571
1	0	0	0	P49Total rearir		0.35776	0.39363	0.36980
2	0	0	0	P63Rearin	0.35776		0.20452	0.89914
3	0	0	1	P49Total rearir	0.39363	0.20452		0.00629
4	0	0	1	P63Rearin	0.36980	0.89914	0.00629	
5	0	1	0	P49Total rearir	0.52913	0.97860	0.22016	0.90812
6	0	1	0	P63Rearin	0.80855	0.69079	0.35496	0.80953
7	0	1	1	P49Total rearir	0.65575	0.98112	0.19093	0.61291
8	0	1	1	P63Rearin	0.09671	0.69363	0.00905	0.72813
9	1	0	0	P49Total rearir	0.10344	0.00560	0.31863	0.00087
10	1	0	0	P63Rearin	0.66216	0.93248	0.20322	0.81561
11	1	0	1	P49Total rearir	0.60858	0.19898	0.92440	0.05848
12	1	0	1	P63Rearin	0.69314	0.94418	0.29760	0.87138
13	1	1	0	P49Total rearir	0.37157	0.97415	0.19063	0.87506
14	1	1	0	P63Rearin	0.72490	0.91234	0.29541	0.87915
15	1	1	1	P49Total rearir	0.27911	0.88901	0.04079	0.82293
16	1	1	1	P63Rearin	0.10423	0.75902	0.00972	0.86322

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 176.57, df = 88.491							
	MS	Run	Lesion	TIME	{5} 39.444	{6} 38.222	{7} 34.125	{8} 25.250
1	0	0	0	P49Total rearir	0.52913	0.80855	0.65575	0.09671
2	0	0	0	P63Rearin	0.97860	0.69079	0.98112	0.69363
3	0	0	1	P49Total rearir	0.22016	0.35496	0.19093	0.00905
4	0	0	1	P63Rearin	0.90812	0.80953	0.61291	0.72813
5	0	1	0	P49Total rearir		0.99606	0.98810	0.58169
6	0	1	0	P63Rearin	0.99606		0.93627	0.51600
7	0	1	1	P49Total rearir	0.98810	0.93627		0.37410
8	0	1	1	P63Rearin	0.58169	0.51600	0.37410	
9	1	0	0	P49Total rearir	0.01305	0.01645	0.00424	0.00018
10	1	0	0	P63Rearin	0.98592	0.87898	0.91968	0.64859
11	1	0	1	P49Total rearir	0.25930	0.35768	0.17816	0.00758
12	1	0	1	P63Rearin	0.98746	0.98627	0.97576	0.53890
13	1	1	0	P49Total rearir	0.85650	0.99656	0.98102	0.50414
14	1	1	0	P63Rearin	0.98507	0.99286	0.97561	0.57955
15	1	1	1	P49Total rearir	0.85606	0.77439	0.74499	0.59345
16	1	1	1	P63Rearin	0.61623	0.57229	0.69914	0.98430

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 176.57, df = 88.491

Cell No.	MS	Run	Lesion	TIME	{9} 63.167	{10} 34.833	{11} 53.667	{12} 39.333
1	0	0	0	P49Total rearir	0.10344	0.66216	0.60858	0.69314
2	0	0	0	P63Rearin	0.00560	0.93248	0.19898	0.94418
3	0	0	1	P49Total rearir	0.31863	0.20322	0.92440	0.29760
4	0	0	1	P63Rearin	0.00087	0.81561	0.05848	0.87138
5	0	1	0	P49Total rearir	0.01305	0.98592	0.25930	0.98746
6	0	1	0	P63Rearin	0.01645	0.87898	0.35768	0.98627
7	0	1	1	P49Total rearir	0.00424	0.91968	0.17816	0.97576
8	0	1	1	P63Rearin	0.00018	0.64859	0.00758	0.53890
9	1	0	0	P49Total rearir		0.00034	0.17810	0.01669
10	1	0	0	P63Rearin	0.00034		0.19335	0.96752
11	1	0	1	P49Total rearir	0.17810	0.19335		0.10994
12	1	0	1	P63Rearin	0.01669	0.96752	0.10994	
13	1	1	0	P49Total rearir	0.01564	0.97996	0.25681	0.97884
14	1	1	0	P63Rearin	0.01363	0.96044	0.30712	0.88141
15	1	1	1	P49Total rearir	0.00048	0.83836	0.03555	0.81763
16	1	1	1	P63Rearin	0.00019	0.73324	0.00804	0.57895

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 176.57, df = 88.491

Cell No.	MS	Run	Lesion	TIME	{13} 40.714	{14} 38.286	{15} 29.000	{16} 25.111
1	0	0	0	P49Total rearir	0.37157	0.72490	0.27911	0.10423
2	0	0	0	P63Rearin	0.97415	0.91234	0.88901	0.75902
3	0	0	1	P49Total rearir	0.19063	0.29541	0.04079	0.00972
4	0	0	1	P63Rearin	0.87506	0.87915	0.82293	0.86322
5	0	1	0	P49Total rearir	0.85650	0.98507	0.85606	0.61623
6	0	1	0	P63Rearin	0.99656	0.99286	0.77439	0.57229
7	0	1	1	P49Total rearir	0.98102	0.97561	0.74499	0.69914
8	0	1	1	P63Rearin	0.50414	0.57955	0.59345	0.98430
9	1	0	0	P49Total rearir	0.01564	0.01363	0.00048	0.00019
10	1	0	0	P63Rearin	0.97996	0.96044	0.83836	0.73324
11	1	0	1	P49Total rearir	0.25681	0.30712	0.03555	0.00804
12	1	0	1	P63Rearin	0.97884	0.88141	0.81763	0.57895
13	1	1	0	P49Total rearir		0.97041	0.80674	0.53315
14	1	1	0	P63Rearin	0.97041		0.83748	0.62714
15	1	1	1	P49Total rearir	0.80674	0.83748		0.75761
16	1	1	1	P63Rearin	0.53315	0.62714	0.75761	

A5.1.6.3.11. Cylinder Test P49 and P63 Total stepping Repeated Measures ANOVA

Effect	SS	Degr. of Freedom	MS	F	p
Repeated Measures Analysis of Variance (Cylinder te Sigma-restricted parameterization Effective hypothesis decomposition					
Intercept	23763.31	1	23763.31	354.5465	0.000000
MS	6.15	1	6.15	0.0917	0.763254
Run	195.70	1	195.70	2.9198	0.093578
Lesion	378.14	1	378.14	5.6418	0.021334
MS*Run	6.78	1	6.78	0.1012	0.751691
MS*Lesion	0.46	1	0.46	0.0069	0.934314
Run*Lesion	105.47	1	105.47	1.5736	0.215406
MS*Run*Lesion	12.78	1	12.78	0.1906	0.664256
Error	3418.25	51	67.02		
TIME	1054.95	1	1054.95	36.9442	0.000000
TIME*MS	16.11	1	16.11	0.5642	0.456021
TIME*Run	224.97	1	224.97	7.8785	0.007068
TIME*Lesion	5.27	1	5.27	0.1845	0.669337
TIME*MS*Run	3.37	1	3.37	0.1182	0.732422
TIME*MS*Lesion	5.28	1	5.28	0.1849	0.668977
TIME*Run*Lesion	55.60	1	55.60	1.9469	0.168963
TIME*MS*Run*Lesion	0.87	1	0.87	0.0304	0.862351
Error	1456.31	51	28.56		

A5.1.6.3.12. Cylinder Test P49 and P63 Total stepping repeated measures Post hoc Newman Keuls test (Time)

Cell No.	TIME	{1} 17.000	{2} 11.237
Newman-Keuls test; variable DV_1 (Cylinder te Approximate Probabilities for Post Hoc Tests Error: Within MS = 28.555, df = 51.000			
1	P49 Total steppin		0.000115
2	P63 Steppin	0.000115	

A5.1.6.3.13. Cylinder Test P49 and P63 Total stepping repeated measures Post hoc Newman Keuls test (Time*Run)

Cell No.	Run	TIME	{1} 20.077	{2} 11.154	{3} 14.576	{4} 11.303
Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 47.790, df = 87.780						
1	0	P49 Total steppin		0.000164	0.003306	0.000120
2	0	P63 Steppin	0.000164		0.148383	0.934685
3	1	P49 Total steppin	0.003306	0.148383		0.023594
4	1	P63 Steppin	0.000120	0.934685	0.023594	

A5.1.6.3.14. Cylinder Test P49 and P63 Total movements Repeated Measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder te Sigma-restricted parameterization Effective hypothesis decomposition SS	Degr. of Freedom	MS	F	p
Intercept	330897.1	1	330897.1	624.2578	0.000000
MS	276.4	1	276.4	0.5215	0.473514
Run	5227.3	1	5227.3	9.8617	0.002807
Lesion	2603.8	1	2603.8	4.9123	0.031153
MS*Run	485.3	1	485.3	0.9155	0.343172
MS*Lesion	62.0	1	62.0	0.1170	0.733693
Run*Lesion	1344.9	1	1344.9	2.5372	0.117374
MS*Run*Lesion	15.0	1	15.0	0.0284	0.866859
Error	27033.3	51	530.1		
TIME	9020.6	1	9020.6	39.6584	0.000000
TIME*MS	0.5	1	0.5	0.0024	0.961442
TIME*Run	3075.1	1	3075.1	13.5194	0.000568
TIME*Lesion	2.9	1	2.9	0.0129	0.910006
TIME*MS*Run	42.5	1	42.5	0.1869	0.667351
TIME*MS*Lesion	535.7	1	535.7	2.3552	0.131046
TIME*Run*Lesion	246.0	1	246.0	1.0816	0.303239
TIME*MS*Run*Lesion	181.3	1	181.3	0.7969	0.376223
Error	11600.3	51	227.5		

A5.1.6.3.15. Cylinder Test P49 and P63 Total movements repeated measures Post hoc Newman Keuls test (Time)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder te Approximate Probabilities for Post Hoc Tests Error: Within MS = 227.46, df = 51.000 TIME	{1} 60.644	{2} 44.237
1	P49 Tota		0.000115
2	P63 Tota	0.000115	

A5.1.6.3.16. Cylinder Test P49 and P63 Total movements repeated measures Post hoc Newman Keuls test (Time*Run)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 378.76, df = 87. Run	TIME	{1} 73.962	{2} 46.038	{3} 50.152	{4} 42.818
1	0	P49 Tota		0.000123	0.000123	0.000145
2	0	P63 Tota	0.000123		0.422596	0.529800
3	1	P49 Tota	0.000123	0.422596		0.162667
4	1	P63 Tota	0.000145	0.529800	0.162667	

A5.1.6.4.1.1. Cylinder Test P49 Non-MS only Descriptive Statistics

Descriptive Statistics (Cylinder test P49)
Include condition: MS=0

Effect	Level of Factor	Level of Factor	N	% Left Limb use Mean	% Left Limb use Std.Dev.	% Left Limb use Std.Err	% Left Limb use -95.00%	% Left Limb use +95.00%
Total			31	59.4582	13.1031	2.35339	54.6520	64.2645
Running	0		14	58.0085	12.3261	3.29429	50.8916	65.1254
Running	1		17	60.6521	13.9686	3.38790	53.4701	67.8342
Lesion	0		16	51.6320	6.1328	1.53320	48.3640	54.8999
Lesion	1		15	67.8062	13.5257	3.49234	60.3159	75.2966
Running*Lesio	0	0	7	50.7223	3.5170	1.32930	47.4696	53.9750
Running*Lesio	0	1	7	65.2947	13.8904	5.25010	52.4482	78.1412
Running*Lesio	1	0	9	52.3395	7.7432	2.58107	46.3876	58.2915
Running*Lesio	1	1	8	70.0038	13.7362	4.85650	58.5200	81.4876

Descriptive Statistics (Cylinder test P49)
Include condition: MS=0

Effect	Level of Factor	Level of Factor	N	% Grooming Mean	% Grooming Std.Dev.	% Grooming Std.Err	% Grooming -95.00%	% Grooming +95.00%
Total			31	29.9781	12.8388	2.30592	25.2688	34.6874
Running	0		14	26.8184	12.5032	3.34164	19.5992	34.0376
Running	1		17	32.5802	12.8887	3.12596	25.9535	39.2070
Lesion	0		16	32.8996	12.5385	3.13463	26.2183	39.5810
Lesion	1		15	26.8618	12.8302	3.31276	19.7566	33.9670
Running*Lesio	0	0	7	30.9022	13.7643	5.20243	18.1723	43.6321
Running*Lesio	0	1	7	22.7345	10.5046	3.97038	13.0194	32.4497
Running*Lesio	1	0	9	34.4532	12.1028	4.03428	25.1501	43.7563
Running*Lesio	1	1	8	30.4731	14.2376	5.03376	18.5701	42.3761

Descriptive Statistics (Cylinder test P49)
Include condition: MS=0

Effect	Level of Factor	Level of Factor	N	Total rearing Mean	Total rearing Std.Dev.	Total rearing Std.Err	Total rearing -95.00%	Total rearing +95.00%
Total			31	42.8387	14.7808	2.65471	37.4170	48.2603
Running	0		14	50.0000	15.5859	4.16553	41.0009	58.9990
Running	1		17	36.9411	11.4207	2.76994	31.0691	42.8131
Lesion	0		16	42.7500	13.5867	3.39669	35.5101	49.9898
Lesion	1		15	42.9333	16.4424	4.24540	33.8278	52.0388
Running*Lesio	0	0	7	47.0000	13.6259	5.15012	34.3980	59.6019
Running*Lesio	0	1	7	53.0000	17.8792	6.75771	36.4644	69.5355
Running*Lesio	1	0	9	39.4444	13.3707	4.45692	29.1667	49.7221
Running*Lesio	1	1	8	34.1250	8.7576	3.09629	26.8034	41.4465

Effect	Descriptive Statistics (Cylinder test P49) Include condition: MS=0 Level c Factor	Level of Factor	N	Total stepping Mean	Total stepping Std.Dev.	Total stepping Std.Err	Total stepping -95.00%	Total stepping +95.00%
Total			31	17.3225	7.76052	1.39383	14.4760	20.1691
Running	0		14	20.1428	7.36788	1.96915	15.8887	24.3969
Running	1		17	15.0000	7.49166	1.81699	11.1481	18.8518
Lesion	0		16	19.0625	7.71551	1.92887	14.9511	23.1738
Lesion	1		15	15.4666	7.62389	1.96848	11.2446	19.6886
Running*Lesic	0	0	7	22.0000	6.16441	2.32992	16.2988	27.7011
Running*Lesic	0	1	7	18.2857	8.45999	3.19757	10.4615	26.1099
Running*Lesic	1	0	9	16.7777	8.34832	2.78277	10.3606	23.1948
Running*Lesic	1	1	8	13.0000	6.32455	2.23606	7.7125	18.2874

Effect	Descriptive Statistics (Cylinder test P49) Include condition: MS=0 Level c Factor	Level of Factor	N	Total movement Mean	Total movements Std.Dev.	Total movement Std.Err	Total movement -95.00%	Total movements +95.00%
Total			31	60.1612	21.7364	3.90398	52.1883	68.1342
Running	0		14	70.1428	21.9329	5.86183	57.4791	82.8065
Running	1		17	51.9411	18.3319	4.44614	42.5157	61.3665
Lesion	0		16	61.8125	20.8461	5.21154	50.7043	72.9206
Lesion	1		15	58.4000	23.2465	6.00222	45.5265	71.2734
Running*Lesic	0	0	7	69.0000	19.3735	7.32250	51.0824	86.9175
Running*Lesic	0	1	7	71.2857	25.7663	9.73876	47.4558	95.1156
Running*Lesic	1	0	9	56.2222	21.2824	7.09416	39.8630	72.5813
Running*Lesic	1	1	8	47.1250	14.1566	5.00513	35.2897	58.9602

A5.1.6.4.1.2. Cylinder test P49 Non-MS only Percentage Left Limb Use ANOVA

Effect	Univariate Tests of Significance for % Left Limb use (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	108878.8	1	108878.8	969.4581	0.00000
Running	76.7	1	76.7	0.6829	0.41583
Lesion	1991.5	1	1991.5	17.7321	0.00025
Running*Lesion	18.3	1	18.3	0.1631	0.68948
Error	3032.3	27	112.3		

A5.1.6.4.1.3. Cylinder test P49 Non-MS only Percentage Left Limb Use post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable % Left Limb use (Cylinder test I
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 112.31, df = 27.000
Include condition: MS=0

Cell No.	Lesion	{1} 51.632	{2} 67.806
1	0		0.00036(
2	1	0.00036(	

A5.1.6.4.1.4. Cylinder test P49 Non-MS only Percentage Grooming ANOVA

Univariate Tests of Significance for % Grooming (Cylinder test
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	26938.59	1	26938.59	165.695	0.00000(
Running	244.25	1	244.25	1.5023	0.23089
Lesion	282.79	1	282.79	1.7394	0.19829(
Running*Lesion	33.60	1	33.60	0.2067	0.65300
Error	4389.63	27	162.58		

A5.1.6.4.1.5. Cylinder test P49 Non-MS only Total Rearing ANOVA

Univariate Tests of Significance for Total rearing (Cylinder tes
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	57732.63	1	57732.63	311.812	0.00000(
Running	1338.71	1	1338.71	7.2304	0.01213
Lesion	0.89	1	0.89	0.0048	0.94531
Running*Lesion	245.54	1	245.54	1.3262	0.25958
Error	4999.10	27	185.15		

A5.1.6.4.1.6. Cylinder test P49 Non-MS only Total rearing post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total rearing (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 185.15, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 50.000	{2} 36.941
1	0		0.01314
2	1	0.01314	

A5.1.6.4.1.7. Cylinder test P49 Non-MS only Total Stepping ANOVA

Univariate Tests of Significance for Total stepping (Cylinder test
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	9407.156	1	9407.156	169.8969	0.000000
Running	211.597	1	211.597	3.8215	0.061024
Lesion	107.567	1	107.567	1.9427	0.174743
Running*Lesion	0.008	1	0.008	0.0001	0.990663
Error	1494.984	27	55.370		

A5.1.6.4.1.8. Cylinder test P49 Non-MS only Total Movements ANOVA

Univariate Tests of Significance for Total movements (Cylinder tes
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	113748.8	1	113748.8	272.7096	0.000000
Running	2614.8	1	2614.8	6.2688	0.018634
Lesion	88.9	1	88.9	0.2132	0.647997
Running*Lesion	248.3	1	248.3	0.5953	0.447077
Error	11261.9	27	417.1		

A5.1.6.4.1.9. Cylinder test P49 Non-MS only Total movements post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable Total movements (Cylinder test
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 417.11, df = 27.000
Include condition: MS=0

Cell No.	Running	{1} 70.143	{2} 51.941
1	0		0.020282
2	1	0.020282	

A5.1.6.4.2.1. Cylinder Test P63 Non-MS only Descriptive Statistics

Effect	Descriptive Statistics (Cylinder test P63) Include condition: MS=0							
	Level c Factor	Level of Factor	N	% Left limb use Mean	% Left limb use Std.Dev.	% Left limb use Std.Err	% Left limb use -95.00%	% Left limb use +95.00%
Total			32	59.2695	14.4713	2.55818	54.0520	64.4869
Running	0		15	54.9145	12.7351	3.28820	47.8620	61.9670
Running	1		17	63.1121	15.1779	3.68118	55.3083	70.9158
Lesion	0		17	50.9761	5.9212	1.43610	47.9317	54.0205
Lesion	1		15	68.6686	15.6674	4.04532	59.9923	77.3450
Running*Lesio	0	0	8	47.3754	3.2424	1.14638	44.6646	50.0861
Running*Lesio	0	1	7	63.5307	14.2746	5.39532	50.3288	76.7326
Running*Lesio	1	0	9	54.1767	6.0358	2.01196	49.5372	58.8163
Running*Lesio	1	1	8	73.1643	16.3336	5.77480	59.5091	86.8195

Effect	Descriptive Statistics (Cylinder test P63) Include condition: MS=0							
	Level c Factor	Level of Factor	N	% Groomin Mean	% Groomin Std.Dev.	% Groomin Std.Err	% Groomin -95.00%	% Groomin +95.00%
Total			32	27.2211	8.7370	1.54450	24.0711	30.3712
Running	0		15	28.6800	7.3386	1.89483	24.6159	32.7440
Running	1		17	25.9339	9.8499	2.38896	20.8695	30.9983
Lesion	0		17	24.8588	5.7826	1.40249	21.8856	27.8319
Lesion	1		15	29.8984	10.7869	2.78517	23.9248	35.8720
Running*Lesio	0	0	8	25.7500	3.6750	1.29931	22.6776	28.8223
Running*Lesio	0	1	7	32.0285	9.2400	3.49242	23.4829	40.5742
Running*Lesio	1	0	9	24.0666	7.3184	2.43949	18.4411	29.6921
Running*Lesio	1	1	8	28.0346	12.2892	4.34492	17.7605	38.3087

Effect	Descriptive Statistics (Cylinder test P63) Include condition: MS=0							
	Level c Factor	Level of Factor	N	Total rearing Mean	Total rearing Std.Dev.	Total rearing Std.Err	Total rearing -95.00%	Total rearing +95.00%
Total			32	32.2500	14.4579	2.55582	27.0373	37.4626
Running	0		15	32.4000	10.6086	2.73913	26.5251	38.2748
Running	1		17	32.1176	17.5067	4.24600	23.1165	41.1187
Lesion	0		17	36.2352	16.6001	4.02613	27.7002	44.7703
Lesion	1		15	27.7333	10.3334	2.66809	22.0108	33.4558
Running*Lesio	0	0	8	34.0000	12.6265	4.46414	23.4439	44.5560
Running*Lesio	0	1	7	30.5714	8.3238	3.14610	22.8731	38.2696
Running*Lesio	1	0	9	38.2222	20.0547	6.68492	22.8067	53.6377
Running*Lesio	1	1	8	25.2500	11.7928	4.16940	15.3909	35.1090

Effect	Descriptive Statistics (Cylinder test P63) Include condition: MS=0								
	Level of Factor	Level of Factor	N	Total stepping Mean	Total stepping Std.Dev.	Total stepping Std.Err	Total stepping -95.00%	Total stepping +95.00%	
Total			32	10.7812	6.65623	1.17666	8.38142	13.1810	
Running	0		15	10.0666	5.50929	1.42249	7.01571	13.1176	
Running	1		17	11.4117	7.64083	1.85317	7.48321	15.3403	
Lesion	0		17	12.5294	8.07091	1.95748	8.37972	16.6790	
Lesion	1		15	8.8000	3.96772	1.02446	6.60274	10.9972	
Running*Lesio	0	0	8	10.5000	6.45866	2.28348	5.10042	15.8995	
Running*Lesio	0	1	7	9.5714	4.64962	1.75739	5.27123	13.8716	
Running*Lesio	1	0	9	14.3333	9.27361	3.09120	7.20499	21.4616	
Running*Lesio	1	1	8	8.1250	3.44082	1.21651	5.24839	11.0016	

Effect	Descriptive Statistics (Cylinder test P63) Include condition: MS=0								
	Level of Factor	Level of Factor	N	Total movement Mean	Total movement Std.Dev.	Total movement Std.Err	Total movement -95.00%	Total movement +95.00%	
Total			32	43.0312	20.4915	3.62242	35.6432	50.4192	
Running	0		15	42.4666	15.6473	4.04011	33.8014	51.1318	
Running	1		17	43.5294	24.4696	5.93476	30.9482	56.1105	
Lesion	0		17	48.7647	24.1493	5.85707	36.3482	61.1811	
Lesion	1		15	36.5333	13.3463	3.44600	29.1424	43.9242	
Running*Lesio	0	0	8	44.5000	18.6930	6.60897	28.8722	60.1277	
Running*Lesio	0	1	7	40.1428	12.3211	4.65693	28.7477	51.5379	
Running*Lesio	1	0	9	52.5555	28.7450	9.58168	30.4601	74.6509	
Running*Lesio	1	1	8	33.3750	14.2019	5.02116	21.5018	45.2481	

A5.1.6.4.2.2. Cylinder test P63 Non-MS only Percentage Left Limb Use ANOVA

Effect	Univariate Tests of Significance for % Left limb use (Cylinder test Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	112629.7	1	112629.7	912.7318	0.000000
Running	536.0	1	536.0	4.3433	0.046397
Lesion	2450.6	1	2450.6	19.8592	0.000122
Running*Lesion	15.9	1	15.9	0.1290	0.722182
Error	3455.2	28	123.4		

A5.1.6.4.2.3. Cylinder test P63 Non-MS only Percentage Left Limb Use post hoc Newman Keuls test (Running effect)

Newman-Keuls test; variable % Left limb use (Cylinder test I
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 123.40, df = 28.000
Include condition: MS=0

Cell No.	Running	{1} 54.915	{2} 63.112
1	0		0.04660(
2	1	0.04660(	

A5.1.6.4.2.4. Cylinder test P63 Non-MS only Percentage Left Limb Use post hoc Newman Keuls test (Lesion effect)

Newman-Keuls test; variable % Left limb use (Cylinder test I
Approximate Probabilities for Post Hoc Tests
Error: Between MS = 123.40, df = 28.000
Include condition: MS=0

Cell No.	Lesion	{1} 50.976	{2} 68.669
1	0		0.000242
2	1	0.000242	

A5.1.6.4.2.5. Cylinder test P63 Non-MS only Percentage Grooming ANOVA

Univariate Tests of Significance for % Grooming (Cylinder test
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	23957.03	1	23957.03	320.5748	0.00000(
Running	63.96	1	63.96	0.8558	0.36282(
Lesion	208.33	1	208.33	2.7877	0.10613!
Running*Lesion	10.59	1	10.59	0.1418	0.70937(
Error	2092.48	28	74.73		

A5.1.6.4.2.6. Cylinder test P63 Non-MS only Total Rearing ANOVA

Univariate Tests of Significance for Total rearing (Cylinder tes
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	32532.16	1	32532.16	159.1713	0.00000(
Running	2.40	1	2.40	0.0117	0.91452!
Lesion	533.74	1	533.74	2.6114	0.11730!
Running*Lesion	180.73	1	180.73	0.8843	0.35508!
Error	5722.77	28	204.38		

A5.1.6.4.3.7. Cylinder test P63 Non-MS only Total Stepping ANOVA

Effect	Univariate Tests of Significance for Total stepping (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	3589.077	1	3589.077	84.26551	0.00000(
Running	11.305	1	11.305	0.26542	0.61046-
Lesion	101.069	1	101.069	2.37292	0.13468:
Running*Lesion	55.313	1	55.313	1.29865	0.26411!
Error	1192.589	28	42.592		

A5.1.6.4.3.8. Cylinder test P63 Non-MS only Total Movements ANOVA

Effect	Univariate Tests of Significance for Total movements (Cylinder tes Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	57732.38	1	57732.38	142.0611	0.00000(
Running	3.29	1	3.29	0.0081	0.92894!
Lesion	1099.32	1	1099.32	2.7051	0.11121:
Running*Lesion	436.01	1	436.01	1.0729	0.30916(
Error	11378.95	28	406.39		

A5.1.6.4.3.1. Cylinder test P49 and P63 Non-MS only Percentage Left Limb Use Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder t Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0				
	SS	Degr. of Freedom	MS	F	p
Intercept	217522.3	1	217522.3	1009.38(	0.00000(
Run	502.7	1	502.7	2.333	0.13830:
Lesion	4368.8	1	4368.8	20.273	0.00011(
Run*Lesion	32.0	1	32.0	0.149	0.70297:
Error	5818.5	27	215.5		
TIME	0.1	1	0.1	0.003	0.95991!
TIME*Run	100.7	1	100.7	4.073	0.05362(
TIME*Lesion	8.9	1	8.9	0.361	0.55320!
TIME*Run*Lesion	0.2	1	0.2	0.006	0.93717-
Error	667.8	27	24.7		

A5.1.6.4.3.2. Cylinder test P49 and P63 Non-MS only Percentage Grooming Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder t Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	50075.5(	1	50075.5(	360.2057	0.00000(
Run	28.44	1	28.44	0.2046	0.65467(
Lesion	4.09	1	4.09	0.0294	0.86512-
Run*Lesion	3.99	1	3.99	0.0287	0.86669-
Error	3753.52	27	139.02		
TIME	69.54	1	69.54	0.6885	0.41395-
TIME*Run	281.2(	1	281.2(	2.7841	0.10676-
TIME*Lesion	473.5(	1	473.5(	4.688(	0.03937-
TIME*Run*Lesion	38.44	1	38.44	0.3806	0.54246(
Error	2727.08	27	101.0(		

A5.1.6.4.3.3. Cylinder test P49 and P63 Non-MS only Percentage Grooming Repeated measures post hoc Newman Keuls test (Time*Lesion)

Cell No.	Newman-Keuls test; variable DV_1 (Cylinder test) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 120.01, df = 52.679 Include condition: MS=0 Lesion	TIME	{1} 32.900	{2} 24.875	{3} 26.862	{4} 29.898
1	0	P49 % Groomin(		0.14300-	0.28379(	0.44943-
2	0	P63 % Groomin(	0.14300-		0.61603-	0.41501(
3	1	P49 % Groomin(	0.28379(	0.61603-		0.40805-
4	1	P63 % Groomin(	0.44943-	0.41501(	0.40805-	

A5.1.6.4.3.4. Cylinder test P49 and P63 Non-MS only Total Rearing Repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (Cylinder t Sigma-restricted parameterization Effective hypothesis decomposition Include condition: MS=0 SS	Degr. of Freedom	MS	F	p
Intercept	87993.28	1	87993.28	296.2865	0.00000(
Run	803.51	1	803.51	2.7055	0.11159-
Lesion	281.78	1	281.78	0.9488	0.33867-
Run*Lesion	361.9(	1	361.9(	1.2186	0.27938(
Error	8018.65	27	296.99		
TIME	1863.23	1	1863.23	19.4317	0.00014-
TIME*Run	547.45	1	547.45	5.7093	0.02412-
TIME*Lesion	328.29	1	328.29	3.4237	0.07523-
TIME*Run*Lesion	9.84	1	9.84	0.1026	0.75119(
Error	2588.93	27	95.89		

A5.1.6.4.3.4. Cylinder test P49 and P63 Non-MS only Total Rearing Repeated measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Cylinder t
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 95.886, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 42.839	{2} 32.516
1	P49Total rearing		0.00042(
2	P63Rearing	0.00042(	

A5.1.6.4.3.5. Cylinder test P49 and P63 Non-MS only Total Rearing Repeated measures post hoc Newman Keuls test (Time*Run)

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 196.44, df = 42.789
Include condition: MS=0

Cell No.	Run	TIME	{1} 50.000	{2} 33.000	{3} 36.941	{4} 32.118
1	0	P49Total rearing		0.00025	0.01346	0.00540
2	0	P63Rearing	0.00025		0.44032(	0.86245
3	1	P49Total rearin	0.01346	0.44032(		0.37309
4	1	P63Rearing	0.00540	0.86245	0.37309	

A5.1.6.4.3.6. Cylinder test P49 and P63 Non-MS only Total Stepping Repeated measures ANOVA

Repeated Measures Analysis of Variance (Cylinder t
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	12224.2(	1	12224.2(	157.940(	0.00000(
Run	68.87	1	68.87	0.889	0.35388
Lesion	215.19	1	215.19	2.780	0.10698
Run*Lesion	23.82	1	23.82	0.307	0.58361
Error	2089.74	27	77.4(		
TIME	707.68	1	707.68	32.347	0.00000
TIME*Run	150.62	1	150.62	6.8847	0.01412
TIME*Lesion	0.00	1	0.00	0.000(	0.99967
TIME*Run*Lesion	22.62	1	22.62	1.0341	0.31822
Error	590.69	27	21.88		

A5.1.6.4.3.7. Cylinder test P49 and P63 Non-MS only Total Stepping Repeated measures post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Cylinder t
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 21.877, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 17.323	{2} 10.871
1	P49 Total steppin		0.000151
2	P63 Steppin	0.000151	

A5.1.6.4.3.8. Cylinder test P49 and P63 Non-MS only Total Stepping Repeated measures post hoc Newman Keuls test (Time*Run)

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 49.638, df = 41.134
Include condition: MS=0

Cell No.	Run	TIME	{1} 20.143	{2} 10.214	{3} 15.000	{4} 11.412
1	0	P49 Total steppin		0.000177	0.049750	0.003931
2	0	P63 Steppin	0.000177		0.156777	0.640287
3	1	P49 Total steppin	0.049750	0.156777		0.042945
4	1	P63 Steppin	0.003931	0.640287	0.042945	

A5.1.6.4.3.9. Cylinder testP49 and P63 Non-MS only Total Movements Repeated measures ANOVA

Repeated Measures Analysis of Variance (Cylinder t
Sigma-restricted parameterization
Effective hypothesis decomposition
Include condition: MS=0

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	165811.6	1	165811.6	259.7518	0.000000
Run	1342.9	1	1342.9	2.1037	0.158464
Lesion	989.5	1	989.5	1.5500	0.223827
Run*Lesion	571.4	1	571.4	0.8952	0.352473
Error	17235.3	27	638.3		
TIME	4867.5	1	4867.5	25.1435	0.000029
TIME*Run	1272.4	1	1272.4	6.5725	0.016241
TIME*Lesion	328.4	1	328.4	1.6962	0.203791
TIME*Run*Lesion	2.6	1	2.6	0.0136	0.908183
Error	5226.9	27	193.6		

A5.1.6.4.3.10. Cylinder test P49 and P63 Non-MS only Total Movements Repeated measures Post hoc Newman Keuls test (Time effect)

Newman-Keuls test; variable DV_1 (Cylinder t
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 193.59, df = 27.000
Include condition: MS=0

Cell No.	TIME	{1} 60.161	{2} 43.387
1	P49 Tota		0.000197
2	P63 Tota	0.000197	

A5.1.6.4.3.11. Cylinder test P49 and P63 Non-MS only Total Movements Repeated measures Post hoc Newman Keuls test (Time*Run)

Newman-Keuls test; variable DV_1 (Cylinder test)
Approximate Probabilities for Post Hoc Tests
Error: Between; Within; Pooled MS = 415.97, df = 41.
Include condition: MS=0

Cell No.	Run	TIME	{1} 70.143	{2} 43.214	{3} 51.941	{4} 43.529
1	0	P49 Tota		0.000218	0.017661	0.002349
2	0	P63 Tota	0.000218		0.468288	0.966161
3	1	P49 Tota	0.017661	0.468288		0.105602
4	1	P63 Tota	0.002349	0.966161	0.105602	

A5.2.1.1.1. 6-OHDA dose response phospho-c-jun immunohistochemistry SN Cell Counts Data spreadsheet

	1 Dose	2 LS1	3 LS2	4 LS3	5 LS4	6 LS Total	7 LS adjusted
15-03-09 DR1	20	175	142	180	72	569	569
21-03-09a DR2	30	207	80	193	209	689	689
21-03-09a DR5	12	165	81	127	79	452	452
26-05-09 DR1	20		226	158	277	661	881
26-05-09 DR3	12	87	34	90	139	350	350
26-05-09 DR4	30	73	108	143	154	478	478
22-07-09a DR1	30	117	13	0	91	221	221
22-07-09a DR3	12	0	34	0	0	34	34
22-07-09a DR5	20	0	47	9	186	242	242
22-07-09a DR2	12	0	0	72	106	178	178
22-07-09b DR1	12	12	0	0	0	12	12
22-07-09b DR3	20	21	48	36	0	105	105
22-07-09b DR4	20	133	0	54	52	239	239
22-07-09b DR5	12	158	77	82	46	363	363
24-07-09 DR1	30	77	63	32		172	229
24-07-09 DR3	20	6	0	7	0	13	13
24-07-09 DR4	20	58	24	14	24	120	120

A5.2.1.1.2. 6-OHDA dose response phospho-c-jun immunohistochemistry SN Cell Counts Descriptive Statistics

	Descriptive Statistics (PCJUN counts2 spreadsheet)						
Effect	Level of Factor	N	LS adjusted Mean	LS adjusted Std.Dev.	LS adjusted Std.Err	LS adjusted -95.00%	LS adjusted +95.00%
Total		17	304.4510	245.2357	59.4784	178.3624	430.5395
Dose	12	6	231.5000	184.3928	75.2780	37.9916	425.0084
Dose	20	7	309.9048	308.0859	116.4455	24.9728	594.8367
Dose	30	4	404.3333	224.1265	112.0632	47.6981	760.9685

A5.2.1.1.3. 6-OHDA dose response phospho-c-jun immunohistochemistry SN cell counts ANOVA

Effect	Univariate Tests of Significance for LS adjusted (PCJUN counts2 spreads Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	159853	1	159853	25.13981	0.00019(
Dose	72045	2	36023	0.56652	0.579981
Error	890203	14	63586		

A5.2.1.2.1. 6-OHDA dose response tyrosine hydroxylase immunohistochemistry SN cell counts Data spreadsheet

	1 6-ODHA dose	2 Total Right	3 Total Lef	4 % L/R
15-03-09 DR1	20	911	605	66.4105
21-03-09a DR2	30	993	651	65.6171
21-03-09a DR5	12	924	564	61.0389
26-05-09 DR3	12	595	369	61.9747
26-05-09 DR4	30	833	733	87.9879
22-07-09a DR1	30	769	574	74.6341
22-07-09a DR3	12	839	608	72.4672
22-07-09a DR5	20	665	445	66.9172
22-07-09a DR2	12	405	297	73.2510
22-07-09b DR1	12	1026	734	71.5399
22-07-09b DR3	20	887	721	81.2852
22-07-09b DR4	20	832	727	87.3798
22-07-09b DR5	12	1095	914	83.4703
24-07-09 DR1	30	1078	926	85.8998
24-07-09 DR3	20	853	587	68.8159
24-07-09 DR4	20	674	427	63.3531

A5.2.1.2.2. 6-OHDA dose response tyrosine hydroxylase immunohistochemistry SN cell counts descriptive statistics

	Descriptive Statistics (TH Cell counts)						
Effect	Level of Factor	N	Total Righ Mean	Total Righ Std.Dev.	Total Righ Std.Err	Total Righ -95.00%	Total Righ +95.00%
Total		16	836.109	183.735	45.934	738.203	934.015
6-ODHA dose	12	6	814.000	265.281	108.300	535.603	1092.39
6-ODHA dose	20	6	803.666	107.464	43.872	690.889	916.44
6-ODHA dose	30	4	917.937	142.286	71.143	691.528	1144.34

	Descriptive Statistics (TH Cell counts)						
Effect	Level of Factor	N	Total Left Mean	Total Left Std.Dev.	Total Left Std.Err	Total Left -95.00%	Total Left +95.00%
Total		16	617.557	177.112	44.2781	523.180	711.934
6-ODHA dose	12	6	580.902	228.565	93.3115	341.037	820.767
6-ODHA dose	20	6	585.333	129.327	52.7975	449.613	721.053
6-ODHA dose	30	4	720.875	151.332	75.6663	480.070	961.679

Effect	Descriptive Statistics (TH Cell counts)						
	Level of Factor	N	% L/R Mean	% L/R Std.Dev.	% L/R Std.Err	% L/R -95.00%	% L/R +95.00%
Total		16	73.25271	9.27485	2.318711	68.31049	78.19492
6-ODHA dose	12	6	70.62371	8.28067	3.380569	61.93368	79.31374
6-ODHA dose	20	6	72.36032	9.63284	3.932590	62.25128	82.46936
6-ODHA dose	30	4	78.53477	10.41933	5.209667	61.95528	95.11425

A5.2.1.2.3. 6-OHDA dose response tyrosine hydroxylase immunohistochemistry SN cell counts %L/R ANOVA

Effect	Univariate Tests of Significance for % L/R (TH Cell co Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	84121.0(	1	84121.0(	965.6334	0.00000(
6-ODHA dose	157.85	2	78.92	0.9060	0.428204
Error	1132.49	13	87.11		

A5.2.1.2.4. 6-OHDA dose response tyrosine hydroxylase immunohistochemistry SN cell counts Right and Left repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (TH Cell cou Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1676606(	1	1676606(	260.8297	0.00000(
6-ODHA dose	91463	2	45731	0.7114	0.509087
Error	835637	13	6428(		
LESION	360466	1	360466	97.1035	0.00000(
LESION*6-ODHA dose	1558	2	779	0.2099	0.813353
Error	48258	13	3712		

A5.2.1.2.5. 6-OHDA dose response tyrosine hydroxylase immunohistochemistry SN cell counts Right and Left repeated measures post hoc Newman Keuls test (LESION effect)

Cell No.	Newman-Keuls test; variable DV_1 (TH Cell counts) Approximate Probabilities for Post Hoc Tests Error: Between; Within; Pooled MS = 33996., df = 14.497							
	6-ODHA dose	LESION	{1} 814.00	{2} 580.90	{3} 803.67	{4} 585.33	{5} 917.94	{6} 720.88
1	12	Total Righ		0.000415	0.929728	0.236905	0.380988	0.703064
2	12	Total Lef	0.000415		0.256004	0.969929	0.090768	0.462249
3	20	Total Righ	0.929728	0.256004		0.000354	0.592250	0.483123
4	20	Total Lef	0.236905	0.969929	0.000354		0.073162	0.257599
5	30	Total Righ	0.380988	0.090768	0.592250	0.073162		0.001040
6	30	Total Lef	0.703064	0.462249	0.483123	0.257599	0.001040	

A5.2.2.1. MS study tyrosine hydroxylase immunohistochemistry Rat weights at lesion Data spreadsheet

	1 MS	2 Sex	3 DOB	4 DOL	5 AaL	6 Weeks	7 Mass at lesion
12	0	0	11/23/08	2/5/09	74	10.4	207.1
19	0	0	11/23/08	2/5/09	74	10.4	206
66	0	1	11/23/08	2/5/09	74	10.4	319.8
11	0	0	11/23/08	2/5/09	74	10.4	198.9
33	0	1	11/23/08	2/5/09	74	10.4	301.9
81	1	0	11/24/08	2/9/09	77	11	212.1
84	1	1	11/24/08	2/10/09	78	11.1	313.7
44	0	1	11/23/08	2/10/09	79	11.2	295.6
83	0	0	11/23/08	2/10/09	79	11.2	214.1
37a	1	0	11/24/08	2/12/09	80	11.3	208.8
49	1	0	11/24/08	2/12/09	80	11.3	197.6
22	0	1	11/23/08	2/13/09	82	11.5	329.8
31	0	1	11/24/08	2/13/09	81	11.4	333.4
29	0	1	11/24/08	2/17/09	85	12.1	322.9
1	1	1	11/24/08	2/17/09	85	12.1	337.1
89	1	0	11/25/08	2/18/09	85	12.1	233.5
94	1	0	11/25/08	2/18/09	85	12.1	247.7
88	1	0	11/25/08	2/19/09	86	12.2	233.9
37b	1	1	11/24/08	2/19/09	87	12.3	342.9
77	1	1	11/24/08	2/20/09	88	12.4	337.8
107	1	0	11/25/08	2/20/09	87	12.3	249.4
37b	1	1	11/25/08	2/21/09	88	12.4	331
111	1	1	11/25/08	2/21/09	88	12.4	309.1
110	1	1	11/25/08	2/21/09	88	12.4	354
4	1	1	11/25/08	2/21/09	88	12.4	309.1
97	0	0	11/30/08	2/22/09	84	12	224.6
99	0	0	11/30/08	2/22/09	84	12	234.2

A5.2.2.1.2. MS study tyrosine hydroxylase immunohistochemistry Rat weights at lesion Descriptive Statistics

Effect	Descriptive Statistics (Basic data)							
	Level of Factor	Level of Factor	N	Mass at lesion Mean	Mass at lesion Std.Dev.	Mass at lesion Std.Err	Mass at lesion -95.00%	Mass at lesion +95.00%
Total			27	274.296	55.3584	10.6537	252.397	296.195
MS	0		12	265.691	55.5137	16.0254	230.419	300.963
MS	1		15	281.180	56.1756	14.5044	250.071	312.289
Sex	0		13	220.607	17.6945	4.9075	209.915	231.300
Sex	1		14	324.150	16.7650	4.4806	314.470	333.829
MS*Sex	0	0	6	214.150	13.1140	5.3538	200.387	227.912
MS*Sex	0	1	6	317.233	15.2387	6.2211	301.241	333.225
MS*Sex	1	0	7	226.142	20.1352	7.6104	207.520	244.764

A5.2.2.1.3. MS study tyrosine hydroxylase immunohistochemistry Rat weights at lesion ANOVA

Effect	Univariate Tests of Significance for Mass at lesion (Basic d Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	196488	1	196488	7013.07	0.00000
MS	966	1	966	3.447	0.07620
Sex	70777	1	70777	252.61	0.00000
MS*Sex	0	1	0	0.000	0.99323
Error	6444	23	280		

A5.2.2.1.4. MS Study tyrosine hydroxylase immunohistochemistry Rat weights at lesion post hoc Newman Keuls test (Sex effect)

Cell No.	Newman-Keuls test; variable Mass at lesion (Basic da Approximate Probabilities for Post Hoc Tests Error: Between MS = 280.17, df = 23.000		
	Sex	{1} 220.61	{2} 324.15
1	0		0.00015
2	1	0.00015	

A5.2.2.2.1.1. MS Study Tyrosine Hydroxylase immunohistochemistry Striatum densitometry data spreadsheet

	1 MS	2 Sex	3 L mean corrected	4 R mean corrected	5 L/R percentage ratio
1	1	1	-62.145	87.5320	-70.997616
4	1	1	34.1930	175.756	19.454733
19	0	0	38.9505	570.596	6.8262818
22	0	1	-146.43	1842.28	-7.9487983
29	0	1	99.7002	193.836	51.435303
31	0	1	-297.48	1153.06	-25.799829
33	0	1	646.18	1042.4	61.986881
37a	1	0	-481.97	889.126	-54.207869
37b	1	1	-118.24	706.187	-16.744302
44	0	1	216.202	1380.6	15.65992
49	1	0	96.0942	2128.93	4.5137283
66	0	1	591.384	571.750	103.4338
77	1	1	-226.11	41.1074	-550.06
81	1	0	1033.80	1460.22	70.79752
83	0	0	55.3084	1960.95	2.820490
84	1	1	1149.01	1452.1	79.126519
88	1	0	245.696	780.139	31.493900
89	1	0	-225.09	201.818	-111.5330
94	1	0	360.26	644.394	55.907490
97	0	0	-156.47	394.954	-39.619200
99	0	0	-19.272	328.120	-5.8734429
37b	1	1	188.120	303.603	61.962387
107	1	0	349.516	597.023	58.543239
110	1	1	558.02	1103.77	50.555780
111	1	1	-103.58	37.6573	-275.07480

A5.2.2.2.1.2. MS Study tyrosine hydroxylase immunohistochemistry striatum densitometry descriptive statistics

Effect	Descriptive Statistics (MS Study TH densitometry without outliers)							
	Level of Factor	Level of Factor	N	L mean corrected Mean	L mean corrected Std.Dev.	L mean corrected Std.Err	L mean corrected -95.00%	L mean corrected +95.00%
Total			25	153.024	397.863	79.572	-11.206	317.254
MS	0		10	102.805	308.699	97.619	-118.02	323.635
MS	1		15	186.503	455.082	117.501	-65.51	438.519
Sex	0		11	117.892	393.677	118.698	-146.58	382.368
Sex	1		14	180.627	413.709	110.568	-58.24	419.496
MS*Sex	0	0	4	-20.372	96.216	48.108	-173.47	132.728
MS*Sex	0	1	6	184.923	381.768	155.856	-215.71	585.564
MS*Sex	1	0	7	196.900	483.370	182.696	-250.14	643.943
MS*Sex	1	1	8	177.406	462.307	163.450	-209.09	563.904

Effect	Descriptive Statistics (MS Study TH densitometry without outliers)							
	Level of Factor	Level of Factor	N	R mean corrected Mean	R mean corrected Std.Dev.	R mean corrected Std.Err	R mean corrected -95.00%	R mean corrected +95.00%
Total			25	801.92	621.629	124.325	545.32	1058.5
MS	0		10	943.86	633.038	200.184	491.01	1396.7
MS	1		15	707.29	617.120	159.339	365.54	1049.0
Sex	0		11	905.11	655.679	197.694	464.62	1345.6
Sex	1		14	720.83	605.476	161.820	371.24	1070.4
MS*Sex	0	0	4	813.65	771.669	385.834	-414.24	2041.5
MS*Sex	0	1	6	1030.66	584.326	238.550	417.45	1643.8
MS*Sex	1	0	7	957.38	640.332	242.022	365.17	1549.5
MS*Sex	1	1	8	488.46	541.255	191.362	35.96	940.9

Effect	Descriptive Statistics (MS Study TH densitometry without outliers)							
	Level of Factor	Level of Factor	N	L/R percentage ratio Mean	L/R percentage ratio Std.Dev.	L/R percentage ratio Std.Err	L/R percentage ratio -95.00%	L/R percentage ratio +95.00%
Total			25	-19.334	134.633	26.9266	-74.908	36.2399
MS	0		10	16.292	43.671	13.8102	-14.949	47.5330
MS	1		15	-43.084	168.333	43.4636	-136.30	50.1354
Sex	0		11	1.788	54.386	16.3982	-34.749	38.3256
Sex	1		14	-35.929	174.683	46.6859	-136.78	64.9291
MS*Sex	0	0	4	-8.961	21.114	10.5573	-42.56	24.6368
MS*Sex	0	1	6	33.127	48.116	19.6433	-17.36	83.6227
MS*Sex	1	0	7	7.930	67.719	25.5954	-54.69	70.5605
MS*Sex	1	1	8	-87.723	218.773	77.3482	-270.62	95.1763

A5.2.2.2.1.3. MS Study Tyrosine hydroxylase immunohistochemistry Striatum densitometry Right and Left repeated measures ANOVA

Repeated Measures Analysis of Variance (MS Study TH densitometry without
Sigma-restricted parameterization
Effective hypothesis decomposition

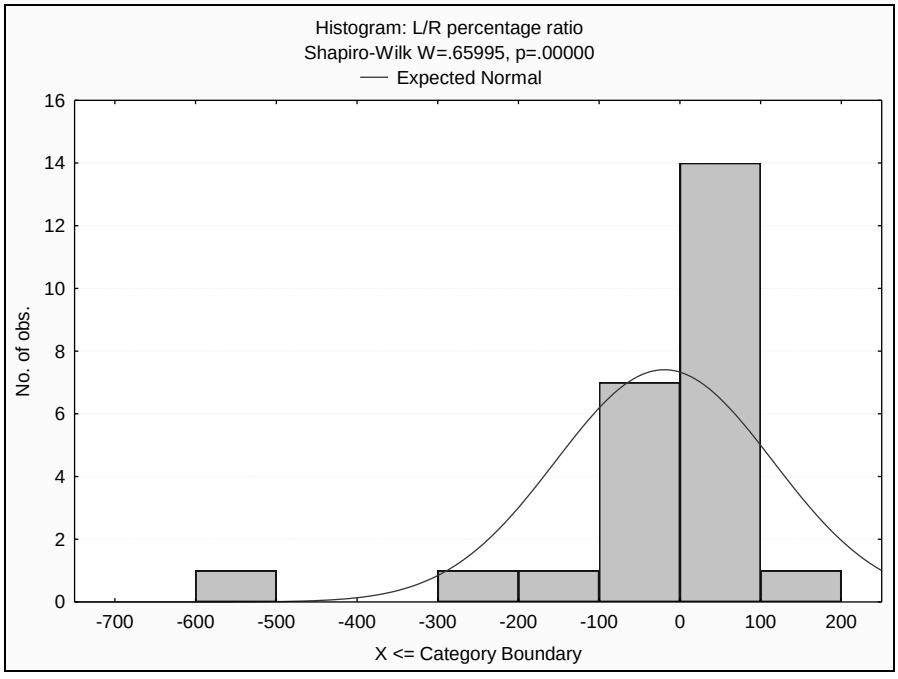
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1070922	1	1070922	29.4486	0.00002
MS	2601	1	2601	0.0715	0.79172
Sex	319	1	319	0.0087	0.92625
MS*Sex	60582	1	60582	1.6659	0.21083
Error	763681	21	36365		
LESION	552918	1	552918	28.8684	0.00002
LESION*MS	27022	1	27022	1.4108	0.24817
LESION*Sex	13994	1	13994	0.7306	0.40232
LESION*MS*Sex	15532	1	15532	0.8109	0.37805
Error	402213	21	19153		

A5.2.2.2.1.4. MS Study Tyrosine hydroxylase immunohistochemistry Striatum densitometry Right and Left repeated measures post hoc Newman Keuls test (LESION effect)

Newman-Keuls test; variable DV_1 (MS Study TH densitometry without ou
Approximate Probabilities for Post Hoc Tests
Error: Within MS = 1915E2, df = 21.000

Cell No.	LESION	{1} 153.02	{2} 801.92
1	L mean correcte		0.00017
2	R mean correcte	0.00017	

A5.2.2.2.1.5. MS Study Tyrosine hydroxylase immunohistochemistry Striatum densitometry L/R Percentage ratio Shapiro-Wilk test for normality



A5.2.2.2.1.6. MS Study Tyrosine Immunohistochemistry Striatum Densitometry L/R percentage ratio Kruskal-Wallis ANOVA by ranks (Grouping variable MS)

	Kruskal-Wallis ANOVA by Ranks; L/R percentage ratio (MS Study TH densitc Independent (grouping) variable: MS Kruskal-Wallis test: H (1, N= 25) =.0769231 p =.7815		
Depend.: L/R percentage ratio	Code	Valid N	Sum of Ranks
0	0	10	135.000
1	1	15	190.000

A5.2.2.2.1.7. MS Study Tyrosine Immunohistochemistry Striatum Densitometry L/R percentage ratio Kruskal-Wallis ANOVA by ranks (Grouping variable Sex)

	Kruskal-Wallis ANOVA by Ranks; L/R percentage ratio (MS Study TH densitc Independent (grouping) variable: Sex Kruskal-Wallis test: H (1, N= 25) =.0749251 p =.7843		
Depend.: L/R percentage ratio	Code	Valid N	Sum of Ranks
0	0	11	138.000
1	1	14	187.000

A5.2.2.2.2.1. MS Study Tyrosine Hydroxylase immunohistochemistry SN cell counts Data Spreadsheet

	1 MS	2 Sex	3 Right	4 Left	5 100*L/R
12	0	0	806	309	38.3374
19	0	0	627	518	82.6156
66	0	1	1080	777	71.9444
11	0	0	1218	722	59.277
33	0	1	1313	879	66.9459
81	1	0	820	746	90.9756
84	1	1	1053	850	80.7217
44	0	1	1328	925	69.6536
83	0	0	1048	653	62.3091
37a	1	0	904	273	30.1991
49	1	0	1130	771	68.2300
22	0	1	343	146	42.565
31	0	1	600	185	30.8333
29	0	1	383	281	73.3681
1	1	1	36	11	30.5555
89	1	0	345	148	42.8985
94	1	0	732	589	80.4644
88	1	0	1034	905	87.5241
37b	1	1	469	198	42.2174
77	1	1	165	154	93.3333
107	1	0	706	468	66.2889
37b	1	1	559	471	84.257
111	1	1	192	48	25
110	1	1	870	540	62.0689
4	1	1	174	63	36.206
97	0	0	456	261	57.2368
99	0	0	302	194	64.2384

A5.2.2.2.2.2. MS Study Tyrosine hydroxylase immunohistochemistry SN cell counts Descriptive Statistics

	Descriptive Statistics (MS TH SN cell counts)							
Effect	Level of Factor	Level of Factor	N	Right Mean	Right Std.Dev.	Right Std.Err	Right -95.00%	Right +95.00%
Total			27	692.333	379.422	73.020	542.238	842.428
MS	0		12	792.000	390.204	112.642	544.075	1039.924
MS	1		15	612.600	363.866	93.950	411.097	814.103
Sex	0		13	779.076	291.861	80.947	602.706	955.447
Sex	1		14	611.785	441.340	117.953	356.963	866.608
MS*Sex	0	0	6	742.833	350.121	142.936	375.403	1110.263
MS*Sex	0	1	6	841.166	454.515	185.555	364.181	1318.152
MS*Sex	1	0	7	810.142	256.462	96.933	572.955	1047.331
MS*Sex	1	1	8	439.750	367.767	130.025	132.288	747.211

	Descriptive Statistics (MS TH SN cell counts)							
Effect	Level of Factor	Level of Factor	N	Left Mean	Left Std.Dev.	Left Std.Err	Left -95.00%	Left +95.00%
Total			27	447.592	298.213	57.391	329.623	565.561
MS	0		12	487.500	291.060	84.021	302.569	672.430
MS	1		15	415.666	310.061	80.057	243.960	587.373
Sex	0		13	504.384	248.724	68.983	354.082	654.687
Sex	1		14	394.857	338.433	90.450	199.451	590.262
MS*Sex	0	0	6	442.833	219.384	89.563	212.603	673.062
MS*Sex	0	1	6	532.166	365.318	149.140	148.788	915.545
MS*Sex	1	0	7	557.142	276.737	104.597	301.203	813.082
MS*Sex	1	1	8	291.875	298.502	105.536	42.320	541.429

	Descriptive Statistics (MS TH SN cell counts)							
Effect	Level of Factor	Level of Factor	N	100*L/R Mean	100*L/R Std.Dev.	100*L/R Std.Err	100*L/R -95.00%	100*L/R +95.00%
Total			27	60.7506	20.7045	3.98459	52.5602	68.9411
MS	0		12	59.9438	15.4614	4.46333	50.1201	69.7675
MS	1		15	61.3961	24.6431	6.36283	47.7492	75.0430
Sex	0		13	63.8920	18.7948	5.21276	52.5343	75.2496
Sex	1		14	57.8337	22.6330	6.04892	44.7658	70.9016
MS*Sex	0	0	6	60.6691	14.2091	5.80085	45.7575	75.5807
MS*Sex	0	1	6	59.2185	17.9655	7.33440	40.3648	78.0721
MS*Sex	1	0	7	66.6544	22.7805	8.61025	45.5858	87.7229
MS*Sex	1	1	8	56.7952	26.7938	9.47303	34.3950	79.1953

A5.2.2.2.2.3. MS Study Tyrosine hydroxylase immunohistochemistry SN cell counts 100*L/R ANOVA

Effect	Univariate Tests of Significance for 100*L/R (MS TH SN cell cc Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	98492.9{	1	98492.9{	210.486(	0.00000(
MS	21.1(	1	21.1(	0.0451	0.83369(
Sex	212.77	1	212.77	0.4547	0.50683-
MS*Sex	117.61	1	117.61	0.2513	0.62090-
Error	10762.3{	23	467.9{		

A5.2.2.2.2.4. MS Study Tyrosine Hydroxylase immunohistochemistry SN cell counts Right and Left repeated measures ANOVA

Effect	Repeated Measures Analysis of Variance (MS TH SN cell cou Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	1804430{	1	1804430{	88.4153{	0.00000(
MS	176052	1	176052	0.86264	0.362647
Sex	166918	1	166918	0.81788	0.375176
MS*Sex	563771	1	563771	2.76243	0.110073
Error	4693969	23	204086		
LESION	84819(	1	84819(	68.5821{	0.00000(
LESION*MS	36025	1	36025	2.91289	0.101342
LESION*Sex	7685	1	7685	0.62137	0.438589
LESION*MS*Sex	10832	1	10832	0.87587	0.35906(
Error	284452	23	12367		

A5.2.2.2.2.5. MS Study Tyrosine Hydroxylase immunohistochemistry SN Cell counts right and left repeated measures post hoc Newman Keuls test (LESION effect)

Cell No.	Newman-Keuls test; variable DV_1 (MS TH SN cell cou Approximate Probabilities for Post Hoc Tests Error: Within MS = 12367., df = 23.000		
	LESION	{1} 692.33	{2} 447.59
1	Right		0.00015(
2	Left	0.00015(	